



# CITY OF HOUSTON

## INVITATION TO BID

Issued: November 4, 2011

### **Bid Opening:**

Sealed bids, in duplicate, will be received by the City Secretary of the City of Houston, in the City Hall Annex, Public Level, 900 Bagby, Houston, Texas 77002 until **10:30 A.M. Thursday, December 8, 2011**, and all bids will be opened and publicly read in the City Council Chamber, City Hall Annex, Public Level, 900 Bagby at 11:00 A.M. on that date for the purchase of:

### **EXHAUST / SUPPLY FAN REPLACEMENTS AND ASSOCIATED EQUIPMENT FOR THE PUBLIC WORKS AND ENGINEERING DEPARTMENT**

**Invitation to Bid No. S50-C24103**

**NIGP Code: 031-40 / 031-67**

### **Buyer:**

Questions regarding this solicitation should be addressed to Arturo Lopez, Senior Procurement Specialist, at **832-393-8731** or e-mail to **arturo.lopez@houstontx.gov**.

### **Electronic Bidding:**

In order to submit a bid for the items associated with this procurement, you must fill in the pricing information on the "PLACE BID" page.

### **Prebid Conference:**

A Pre-Bid Conference will be held for all Prospective Bidders in the Strategic Purchasing Division, Concourse Level (Basement), Conference Room #1, City Hall, 901 Bagby, at **10:00 a.m. on Wednesday, November 16, 2011**. The site visit will be scheduled at the pre-bid conference.

All Prospective Bidders are urged to be present. It is the bidder's responsibility to ensure that they have secured and thoroughly reviewed all aspects of the solicitation documents prior to the Pre-Bid Conference. Any revisions to be incorporated into this solicitation document arising from discussions before, during and subsequent to the Pre-Bid Conference will be confirmed in writing by Letter(s) of Clarification prior to the bid due date. Verbal responses will not otherwise alter the specifications, terms and conditions as stated herein.

Bidding forms, specifications, and all necessary information should be downloaded from the Internet at [www.purchasing.houstontx.gov](http://www.purchasing.houstontx.gov). By registering and downloading this solicitation document, all updates to this solicitation document will be automatically forwarded via e-mail to any registered bidders. This information may also be obtained from the Supplier Assistance Desk, Strategic Purchasing Division, 901 Bagby, Concourse Level, Houston, Texas 77002.

The place of the bid opening may be transferred in accordance with Paragraph (b), (5) of Section 15-3 of The Code of Ordinances, Houston, Texas. The bid-opening meeting may be rescheduled in accordance with Paragraph (b), (6) of said Section 15-3.

**The City reserves the right to reject any or all bids, or to accept any bid or combination of bids deemed advantageous to it.**

City employees are prohibited from bidding on this solicitation in accordance with the Code of Ordinances Section 15-1.

### **\*CONTENTS:**

- A. OFFER
- B. SCOPE OF WORK/SPECIFICATIONS
- C. GENERAL, SUPPLEMENTARY CONDITIONS AND BOND FORMS

\*NOTE 1: Actual page numbers for each section may change when the solicitation document is downloaded from the Internet or because of letters of clarification. Therefore, bidders must read the solicitation document in its entirety and comply with all the requirements set forth therein.

\*NOTE 2: **To be considered for award please submit the electronic bid form and the forms listed in section A, including the signature page, which must be signed by a company official authorized to bind the company and a 10% Bid Bond.**

## SECTION A



**FORMAL ONE-TIME BID  
EXHAUST / SUPPLY FAN REPLACEMENTS AND ASSOCIATED EQUIPMENT  
FOR THE PUBLIC WORKS AND ENGINEERING DEPARTMENT  
Bid No. S50-C24103  
NIGP Code: 031-40 / 031-67**

To The Honorable Mayor  
and City Council Members  
of the City of Houston, Texas (the "City"):

The undersigned hereby offers to provide services necessary to **Replace Exhaust/Supply Fans and Associated Equipment at the East Water Purification Plant located at 2300 Federal Road for the Public Works and Engineering Department**, F.O.B. destination point Houston, Texas, in accordance with the City's Specifications and General Terms & Conditions and/or samples/drawings provided herein. When issued by the City of Houston, Letters of Clarification shall automatically become part of this bid document and shall supersede any previous specifications or provisions in conflict with Letters of Clarification. It is the responsibility of the bidder to ensure that it has obtained all such letters. By submitting a bid on this project, bidder shall be deemed to have received all Letters of Clarification and to have incorporated them into the bid.

The City may accept this bid offer by issuance of a Notice of Award Letter and/or a Purchase Order at any time on or before the 120th day following the day this Official Bid Form is opened by the City. This offer shall be irrevocable for 120 days after bid opening or for 90 days after City Council awards the bid, whichever comes last, but this period may be extended by written agreement of the parties.

**The City reserves the right to INCREASE quantities during the twelve-month period following the issuance of the first purchase order subject to agreement in writing by the Prime Contractor/Supplier to honor the same bid price.**

The City reserves the option, after bids are opened, to adjust the quantities listed on the electronic bid form upward or downward, subject to the availability of funds, and/or make award (s) on a line item basis.

## SECTION A

**Documents/forms must be downloaded from the City's Website**  
**<http://www.houstontx.gov/purchasing/index.html>**

### **Additional Required Forms to be Included with this bid:**

In addition to the electronic Bid Form and the Official Signature Page, the Forms listed in Table 1 **must be completed and submitted to the Office of the City Secretary on or before the date and time the bid is due:**

<b>Table 1</b>
Affidavit of Ownership
Fair Campaign Ordinance
Hire Houston First Application and Affidavit
Statement of Residence
Conflict of Interest Questionnaire
Contractors References
Pay or Play Contract Compliance Acknowledgement Form
10% Bid Bond

Table 2 lists other documents and forms that should be viewed/downloaded from the City's website, but are not required to be submitted with the bid. The City will request these forms, as applicable, to be completed and submitted to the City by the recommended/successful bidder:

<b>Table 2</b>
Formal Instructions for Bid Terms
Drug Forms
Insurance Certificates Over \$50,000.00
OCP Insurance Certificate Over \$100,000.00
Performance, Maintenance and Statutory Payment Bonds
Construction 2011 Building Wage Decision
Pay or Play Certification of Agreement to Comply with Program
Pay or Play Form 3 / List of Participating Contractors

Questions concerning the Bid should be submitted in writing to: City of Houston, Strategic Purchasing Division, 901 Bagby, Room B506, Houston, TX 77002, Attn: Arturo Lopez or via fax: 832-393-8759 or via email (preferred method) to [arturo.lopez@houstontx.gov](mailto:arturo.lopez@houstontx.gov) no later than **4:00 PM, Monday, November 21, 2011.**

### **NOTE:**

Although it is the intent of the City to award one contract as a result of this invitation to bid, the City reserves the right to award by line item/group.

**QUALITY AND WORKMANSHIP:**

The bidder must be able to demonstrate upon request that it has performed satisfactorily, services similar to the services specified herein. The bidder will provide records of warranty and repair services performed for others upon request. The City of Houston shall be the sole judge whether the services performed are similar to the scope of services specified herein.

**PERMITS:**

Successful Contractor shall be responsible for securing any and all permits for proposed work. Any fee charged for these permits should be the responsibility of the Contractor and not the City of Houston.

**CITY BUILDING CODES:**

All work performed or equipment installed shall be in strict accordance with the City of Houston Building Codes. The Contractor will immediately correct any deficiencies discovered during work or after completion. Failure to correct deficiencies will result in the City having corrections made at the Contractor's expense.

**BID BOND:**

The Contractor shall be required to provide and submit with the bid a Bid Bond in the amount of 10% of the total amount bid by the Contractor. The Bid Bond shall be in the same form as that distributed by the City, and attached hereto, all duly executed by this Bidder (as "Principal") and by a corporate surety company licensed to do business in the State of Texas, and if the amount of the bond is greater than \$100,000.00 the surety must hold a certificate of authority from the United States Secretary of the Treasury, or a Cashier's or a Certified check in a like amount. Company or personal checks are not acceptable.

**PERFORMANCE BOND and PAYMENT BOND:**

The successful Contractor(s) shall be required to provide a Performance and Payment Bond in the total amount (100%) of the Contract if the award is in excess of \$25,000.00.

The Performance and/or Payment Bond shall be in the same form as that distributed by the City, and attached hereto, all duly executed by this bidder (as "Principal") and by an incorporated surety company licensed to do business in the State of Texas. If the amount of the bond is greater than \$100,000.00 the surety must hold a certificate of authority from the United States Secretary of the Treasury.

The Contractor(s) shall be required to provide a Performance and/or Payment Bond as outlined above, which will be delivered to the City Purchasing Agent of the City, on or before the tenth (10<sup>th</sup>) day following the day the bidder receives notice from the City.

**MAINTENANCE BOND:**

The Contractor shall furnish a maintenance bond in the total (100%) bid amount in the form required by the City (samples attached). One bond, also referred to as the One Year Maintenance Bond, will be conditioned upon Contractor's repair, replacement or restoration of any work or any portion of the work which is found to be defective or fails

in any way to comply strictly with this contract or the plans and specifications for such work within a period of one (1) year from the date of acceptance of such work by the City Council or after the date that the "CO", or his designee in writing, determines, in a written notice to the Contractor, to be the date upon which the project is both substantially complete and available for the full and beneficial occupancy or use of the City.

**SITE INSPECTION:**

The City of Houston reserves the right to inspect the bidder's current place of business to evaluate equipment condition and capabilities, staff experience, training and capabilities, and storage capabilities as they relate to the performance of this contract.

**INTERLOCAL AGREEMENTS:**

Under the same terms and conditions hereunder, the Contract may be expanded to other government entities through inter-local agreements between the City of Houston and the respective government entity that encompass all or part of the products/services provided under this contract. Separate contracts will be drawn to reflect the needs of each participating entity.

**HIRE HOUSTON FIRST:**

**Designation as a City Business or Local Business**

To be designated as a City or Local Business for the purposes of the Hire Houston First Program, as set out in Article XI of Chapter 15 of the Houston City Code, a bidder or proposer must submit the **Hire Houston First Application and Affidavit ("HHF Affidavit")** to the Director of the Mayor's Office of Business Opportunities and receive notice that the submission has been approved prior to award of a contract. Bidders are encouraged to secure a designation prior to submission of a bid or proposal if at all possible. **Download the HHF Affidavit** from the Office of Business Opportunities Webpage at the City of Houston e-Government Website at the following location:

[www.houstontx.gov/obo/moreforms/hirehoustonfirstaffidavit.pdf](http://www.houstontx.gov/obo/moreforms/hirehoustonfirstaffidavit.pdf)

Submit the completed application as directed on the form, or submit a signed original affidavit with your bid.

**Award of Procurement of \$100,000 or More for Purchase of Non-Professional Services , Including Construction Services:**

THE CITY WILL AWARD THIS PROCUREMENT TO A " CITY BUSINESS," AS THAT TERM IS DEFINED IN SECTION 15-176 OF THE CITY OF HOUSTON CODE OF ORDINANCES ("THE CODE"):

- IF THE BID OF THE LOCAL BUSINESS IS THE LOWEST RESPONSIBLE BID OR IS WITHIN 3% OF THE LOWEST BID RECEIVED, AND
- UNLESS THE USER DEPARTMENT DETERMINES THAT SUCH AN AWARD WOULD UNDULY INTERFERE WITH CONTRACT NEEDS, AS PROVIDED IN SECTION 15-181 OF THE CODE.

IF THERE IS NO BID OF A LOCAL BUSINESS THAT MEETS THESE CRITERIA, THE

CITY WILL AWARD THE PROCUREMENT TO THE LOWEST RESPONSIBLE BIDDER.

**Award of Procurement under \$100,000 Purchase of Non-Professional Services Including Construction Services:**

THE CITY WILL AWARD THIS PROCUREMENT TO A "LOCAL BUSINESS," AS THAT TERM IS DEFINED IN SECTION 15-176 OF THE CITY OF HOUSTON CODE OF ORDINANCES ("THE CODE");

- IF THE BID OF THE CITY BUSINESS IS THE LOWEST RESPONSIBLE BID OR IS WITHIN 5% OF THE LOWEST BID RECEIVED, AND
- UNLESS THE USER DEPARTMENT DETERMINES THAT SUCH AN AWARD WOULD UNDULY INTERFERE WITH CONTRACT NEEDS, AS PROVIDED IN SECTION 15-181 OF THE CODE.

IF THERE IS NO BID OF A LOCAL BUSINESS THAT MEETS THESE CRITERIA, THE CITY WILL AWARD THE PROCUREMENT TO THE LOWEST RESPONSIBLE BIDDER.

**Award of Procurement that may be More or Less than \$100,000 for Purchase of Non-Professional Services, Including Construction Services:**

THE CITY WILL AWARD THIS PROCUREMENT TO A "LOCAL BUSINESS," AS THAT TERM IS DEFINED IN SECTION 15-176 OF THE CITY OF HOUSTON CODE OF ORDINANCES ("THE CODE");

- IF THE BID OF THE LOCAL BUSINESS IS LESS THAN \$100,000 AND IS THE LOWEST RESPONSIBLE BID OR IS WITHIN 5% OF THE LOWEST BID RECEIVED, OR
- IF THE BID OF THE LOCAL BUSINESS IS MORE THAN \$100,000 AND IS THE LOWEST RESPONSIBLE BID OR IS WITHIN 3% OF THE LOWEST BID RECEIVED, AND
- UNLESS THE USER DEPARTMENT DETERMINES THAT SUCH AN AWARD WOULD UNDULY INTERFERE WITH CONTRACT NEEDS, AS PROVIDED IN SECTION 15-181 OF THE CODE.

IF THERE IS NO BID OF A LOCAL BUSINESS THAT MEETS THESE CRITERIA, THE CITY WILL AWARD THE PROCUREMENT TO THE LOWEST RESPONSIBLE BIDDER.

**CONTRACTOR'S QUESTIONNAIRE**

In order to receive bid award consideration, the bidder must be able to demonstrate that they are currently providing or have had at least one contract, to **replace exhaust/supply fans and associated equipment** that is similar in size and scope to this contract. **Bidder must have references documenting that it has performed replacement of exhaust/supply fans and associated equipment.** The reference(s) should be included in the space provided below. Please attach another piece of paper if necessary. If references are not included with the bid, the bidder shall be required to provide such references to the City of Houston within five working days from receipt of a written request from the City of Houston to do so. **Bidder's capability and experience shall be a factor in determining the Contractor's responsibility.**

1. Business Name: \_\_\_\_\_

Business Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

**Name of Owner/Contact Person:** \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

No. of Years providing Service to this business: \_\_\_\_\_

2. Business Name: \_\_\_\_\_

Business Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

**Name of Owner/Contact Person:** \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

No. of Years providing Service to this business: \_\_\_\_\_

3. Business Name: \_\_\_\_\_

Business Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

**Name of Owner/Contact Person:** \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

No. of Years providing Service to this business: \_\_\_\_\_

4. Business Name: \_\_\_\_\_

Business Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

**Name of Owner/Contact Person:** \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

No. of Years providing Service to this business: \_\_\_\_\_

**SECTION B**  
**SCOPE OF WORK/SPECIFICATIONS**

**1.0 Summary of Scope of Work:**

1.1 GENERAL

1.1.1 The Contractor shall be required to provide all labor, equipment, tools, supervision, transportation, and other services necessary to disconnect, remove and properly dispose of the existing exhaust/supply fans and dampers, located in Plant Building No. 1, Plant Building No. 3 and the two Chemical Buildings at the East Water Purification Plant, located at 2300 Federal Road. The Contractor shall also be required to furnish and install thirteen new exhaust fans, four new supply fans, a new gravity hood, disconnects and all electrical connections in strict accordance with the specifications and drawings included herein. The Contractor shall also be required to test, program and insure that all systems are in optimum working condition.

A PDF version of the Mechanical Drawings can be viewed on the following web link:  
<https://purchasing.houstontx.gov/buyer/BidDocumentManager.aspx?id=C24103>

1.1.2 All work shall be completed in strict accordance with federal, state and local regulations, laws and codes. In addition, the Contractor, if necessary, shall be required, at its own expense, to secure approval of the installation drawings/plans from the City of Houston Code Enforcement Plan Review Section.

**2.0 Performance Time:**

2.1 The Contractor shall have **120 calendar days** to complete all work associated with and required by the contract after receipt of the written Notice to Proceed from City.

**3.0 Warranty:**

3.1 The Contractor shall warranty all materials, equipment and workmanship for ***one year***.

## TECHNICAL SPECIFICATIONS

### **BID GROUP NO. 1**

1.0 Equipment:

#### **LINE ITEM NO. 1**     **NEW REPLACEMENT UNIT: EXHAUST FAN**

Make: PennBarry

Model: HRR-060-09728 **Or City Approved Equal**

1.1 Summary and Scope of Work:

1.1.1 The Contractor shall remove and properly dispose the existing exhaust fans, and dampers at Plant Building No. 1. The Contractor shall also provide and install three PennBarry, Model No. HRR-060-09728, or City approved equal exhaust fans, disconnects and all electrical connections.

1.2 Performance Requirements:

1.2.1 The exhaust fan must provide: 460V/60HZ – 3PH – 15HP

*(As per the specifications provided on the cut sheet drawings, Page Nos. 10 & 11 of 42 )*

**A PDF version of the Mechanical Drawings can be viewed on the following web link:**  
**<https://purchasing.houstontx.gov/buyer/BidDocumentManager.aspx?id=C24103>**

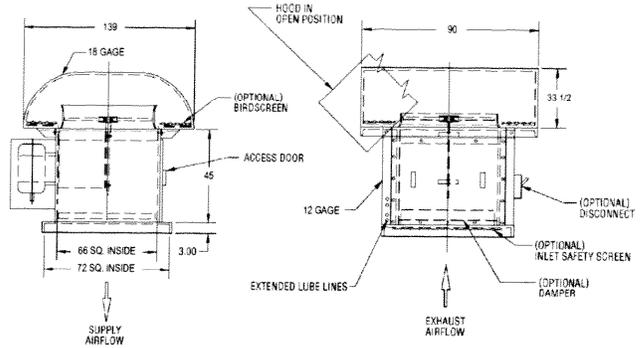
**Plant No.1 EXHAUST FAN**

**Belt Drive Fan Data - HRR**  
Hooded Roof Ventilators

**060**

Prop Diameter = 60 in.	Maximum Motor Frame Size = 286
Fan Weight = 1620 lbs.	Tip Speed, FPM = 15.71 x RPM
Maximum BHP = F (RPM/1000) <sup>3</sup> F (097) = 71.96 F (091) = 22.78	
Inlet & Outlet Diameter (Area) = 60.63 in. (20.05 sq. ft.)	

Approximate fan weights are less motor and accessories.



PROP	CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		1" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
097*	24060	226	0.72	269	1.36	314	2.24	361	3.33	410	4.70						
	28070	266	1.14	302	1.87	339	2.78	377	3.87	417	5.17						
	32080	303	1.70	335	2.52	366	3.46	400	4.61	434	5.89	469	7.36	505	9.03		
	36090	341	2.42	369	3.33	397	4.34	427	5.51	457	6.85	486	8.29	518	9.93	582	13.70
	40100	379	3.32	404	4.31	430	5.41	454	6.58	482	7.98	509	9.49	536	11.10	591	14.70
	44110	417	4.42	440	5.50	463	6.67	486	7.94	509	9.32	534	10.90	559	12.50	608	16.20
	48120	455	5.74	476	6.90	497	8.17	518	9.51	539	10.90	561	12.50	583	14.20	629	17.90
	52130	493	7.30	512	8.53	532	9.91	551	11.30	571	12.80	589	14.30	611	16.10	652	19.90
	56140	531	9.12	548	10.40	567	11.90	585	13.40	603	15.00	621	16.60	639	18.30		

PROP	CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		1" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
091	24080	333	0.76	411	1.56	484	2.60	551	3.80	611	5.13	666	6.64	717	8.29	811	12.10
	28070	388	1.20	457	2.11	521	3.21	582	4.50	636	5.91	690	7.42	739	9.11	829	12.80
	32080	444	1.79	504	2.80	561	3.97	616	5.33	669	6.84	718	8.45	765	10.10	852	13.90
	36090	499	2.55	553	3.67	605	4.94	655	6.36	702	7.92	750	9.64	794	11.40	877	15.20
	40100	555	3.50	604	4.73	650	6.08	695	7.57	741	9.23	783	11.00	826	12.90	905	16.90
	44110	610	4.66	655	5.99	697	7.43	740	9.04	780	10.70	821	12.60	859	14.50	936	18.70
	48120	666	6.05	707	7.49	746	9.05	785	10.70	823	12.50	860	14.40	897	16.40		
	52130	721	7.69	759	9.23	796	10.90	831	12.60	868	14.50	902	16.50	937	18.60		
	56140	777	9.60	812	11.30	847	13.00	880	14.90	913	16.90	946	18.90				

- Notes:**
- 1) Performance shown is for Installation Type A: free inlet, free outlet.
  - 2) Performance ratings do not include the effects of appurtenances in the airstream.
  - 3) Power rating (BHP) does not include drive losses.
- \* 091 and 097 wheels are suitable for exhaust or supply applications, however, 097 wheels are NOT reversible. For reversible flow, select a 091 wheel and add .39 VP loss for equal airflow in both directions.

# Plant No.1 EXHAUST FAN



**PENNBARRY**

1401 N. Plano Rd.  
Richardson, TX 75081  
Tel: (972) 234-3202  
Fax: (972) 497-0468

**Project:** Plant 1 fans  
**Model:** HRR-060-09728  
**Tag:** exhaust fans

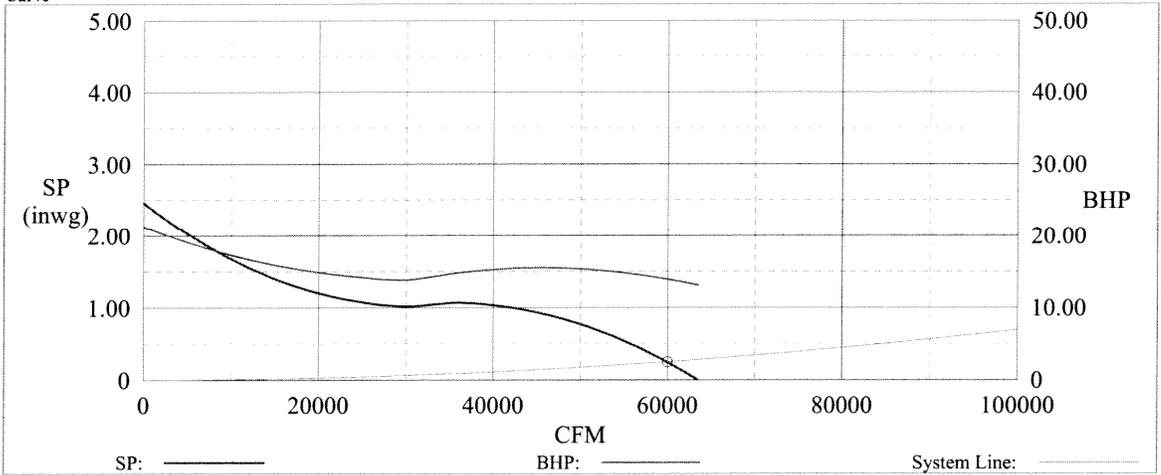
**Performance Data**

Dia (in)	CFM	SP (inwg)	BHP (op)	BHP (70)	RPM	SE %	Temp (F)	Density	Elevation	Tip Speed	Outlet Vel	Class
60.00	60000	0.25	14.08	14.08	599	17	70	0.075	0	9415	2993	-

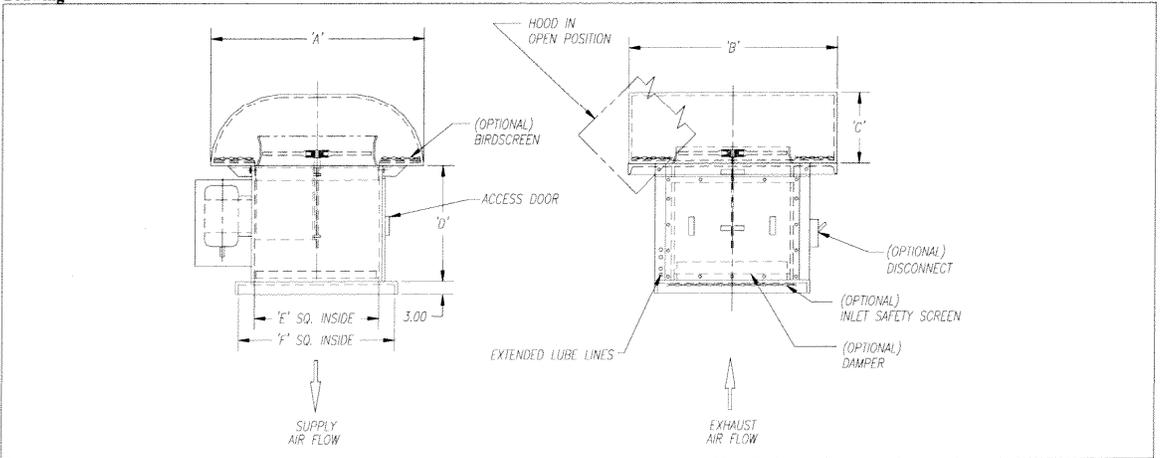
**Sound Data**

Inlet Sound Power (Lw re 10-12 watts)								dBa
63	125	250	500	1000	2000	4000	8000	@ 5'
103	91	92	94	92	91	84	82	86

**Curve**



**Drawing**



**Dimensional Chart** (Reference dimensions in inches only, contact factory for certified drawing)

Weight	A	B	C	D	E	F								
1620	139	90	33.5	45	66	72								

Date: 11/12/2010

Time: 9:45:54 AM

Page: 1

**BID GROUP NO. 2**

2.0 Equipment:

**LINE ITEM NO. 1**     **NEW REPLACEMENT UNIT: EXHAUST FAN**  
Make: PennBarry  
Model: HRR-060-09728 **Or City Approved Equal**

**LINE ITEM NO. 2**     **NEW REPLACEMENT UNIT: SUPPLY FAN**  
Make: PennBarry  
Model: HRR-072-09728 **Or City Approved Equal**

**LINE ITEM NO. 3**     **NEW INSTALLATION UNIT: GRAVITY HOOD**  
Make: Breidert  
Model: BGF INTAKE/RELIEF **Or City Approved Equal**

2.1 Summary and Scope of Work:

2.1.1 The Contractor shall be required to remove and properly dispose of the existing exhaust fans, supply fans and dampers at Plant Building No. 3. The Contractor shall also be required to provide and install three PennBarry, Model No. HRR-060-09728, exhaust fans, two PennBarry, Model No. HRR-072-09728, supply fans, one Breidert, Model, BGF, Intake/Relief gravity hood, or City approved equals, disconnects and all electrical connections.

2.2 Performance Requirements:

2.2.1 The exhaust fan shall provide: 460V/60HZ – 3PH – 3HP  
(As per the specifications provided on the cut sheet drawings, Page Nos. 14 & 15 of 42. )

2.2.2 The supply fan shall provide: 460V/60-HZ – 3PH – 5HP  
(As per the specifications provided on the cut sheet drawings, Page Nos. 16 & 17 of 42 )

2.2.3 The gravity hood shall provide:

2.2.3.1 All aluminum or steel construction with standard mill finish

2.2.3.2 All curb corners miter cut and continuous welded

2.2.3.3 Hood reinforced and braced for extra strength

2.2.3.4 Hood assembled with standing and snap back seams secured with spot welds

2.2.3.5 Hood perimeter opening area same as throat area

2.2.3.6 Relief 1:1 ratio; Intake: 2:1 ratio

2.2.3.7 Birdscreen of ½'x ½" mesh galvanized welded wire

2.2.3.8 Hood must have wide overhang for storm protection

2.2.3.9 Throat I.D. Ax B 72"x54"

2.2.3.10 Hood height 10", Overall height: 15

2.2.3.11 O.D. Curb Cap A+8" & B+8": 80"x 62"

2.2.3.12 Supply voltage: 208/230, 60 HZ, 1 Phase

*(As per the specifications provided on the cut sheet drawings, Page Nos. 18 & 19 of 42 )*

**A PDF version of the Mechanical Drawings can be viewed on the following web link:**  
**<https://purchasing.houstontx.gov/buyer/BidDocumentManager.aspx?id=C24103>**

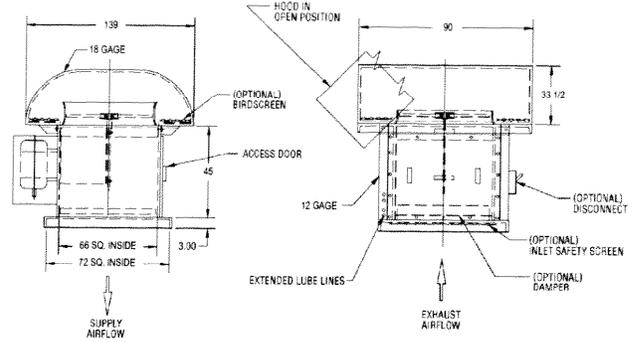
Plant No. 3 EXHAUST FAN

Belt Drive Fan Data - HRR  
Hooded Roof Ventilators

060

Prop Diameter = 60 in.	Maximum Motor Frame Size = 286
Fan Weight = 1620 lbs.	Tip Speed, FPM = 15.71 x RPM
Maximum BHP = F (RPM/1000) <sup>3</sup>	
F (097) = 71.96 F (091) = 22.78	
Inlet & Outlet Diameter (Area) = 60.63 in. (20.05 sq. ft.)	

Approximate fan weights are less motor and accessories.



PROP	CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		1" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
097*	24060	226	0.72	269	1.36	314	2.24	361	3.33	410	4.70						
	28070	266	1.14	302	1.87	339	2.78	377	3.87	417	5.17	460	6.71				
	32080	303	1.70	335	2.52	366	3.46	400	4.61	434	5.89	469	7.36	505	9.03		
	36090	341	2.42	369	3.33	397	4.34	427	5.51	457	6.85	486	8.29	518	9.93	582	13.70
	40100	379	3.32	404	4.31	430	5.41	454	6.58	482	7.98	509	9.49	536	11.10	591	14.70
	44110	417	4.42	440	5.50	463	6.67	486	7.94	509	9.32	534	10.90	559	12.50	608	16.20
	48120	455	5.74	476	6.90	497	8.17	518	9.51	539	10.90	561	12.50	583	14.20	629	17.90
	52130	493	7.30	512	8.53	532	9.91	551	11.30	571	12.80	589	14.30	611	16.10	652	19.90
56140	531	9.12	548	10.40	567	11.90	585	13.40	603	15.00	621	16.60	639	18.30			

PROP	CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		1" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
091	24080	333	0.76	411	1.56	484	2.60	551	3.80	611	5.13	666	6.64	717	8.29	811	12.10
	28070	388	1.20	457	2.11	521	3.21	582	4.50	636	5.91	690	7.42	739	9.11	829	12.80
	32080	444	1.79	504	2.80	561	3.97	616	5.33	669	6.84	718	8.45	765	10.10	852	13.90
	36090	499	2.55	553	3.67	605	4.94	655	6.36	702	7.92	750	9.64	794	11.40	877	15.20
	40100	555	3.50	604	4.73	650	6.08	695	7.57	741	9.23	783	11.00	826	12.90	905	16.90
	44110	610	4.66	655	5.99	697	7.43	740	9.04	780	10.70	821	12.60	859	14.50	936	18.70
	48120	666	6.05	707	7.49	746	9.05	785	10.70	823	12.50	860	14.40	897	16.40		
	52130	721	7.69	759	9.23	796	10.90	831	12.60	868	14.50	902	16.50	937	18.60		
56140	777	9.60	812	11.30	847	13.00	880	14.90	913	16.90	946	18.90					

- Notes:
- 1) Performance shown is for installation Type A: free inlet, free outlet.
  - 2) Performance ratings do not include the effects of appurtenances in the airstream.
  - 3) Power rating (BHP) does not include drive losses.
    - \* 091 and 097 wheels are suitable for exhaust or supply applications, however, 097 wheels are NOT reversible. For reversible flow, select a 091 wheel and add .39 VP loss for equal airflow in both directions.

# Plant No. 3 EXHAUST FAN



**PENNBARRY**

1401 N. Plano Rd.  
Richardson, TX 75081  
Tel: (972) 234-3202  
Fax: (972) 497-0468

**Project:** Plant 1 fans  
**Model:** HRR-060-09728  
**Tag:** exhaust fans

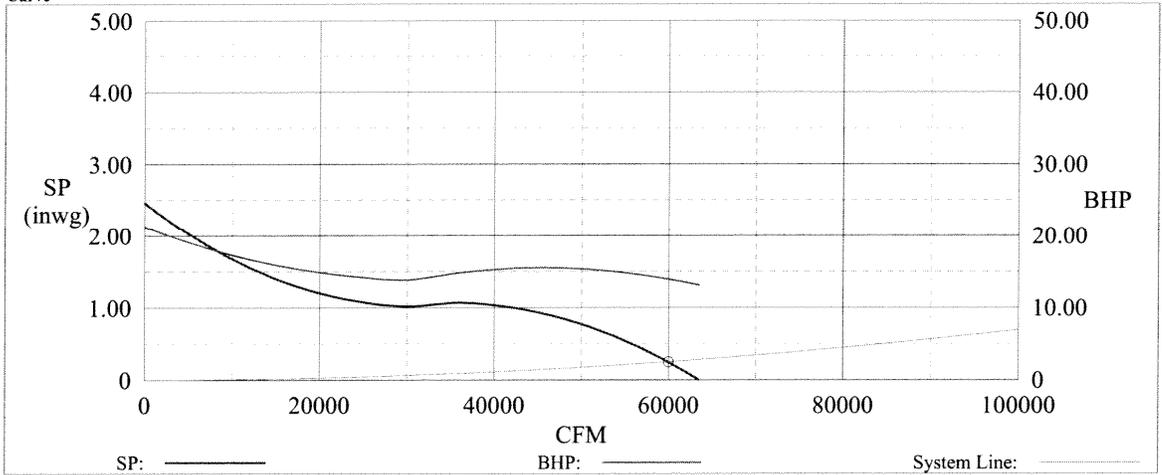
**Performance Data**

Dia (in)	CFM	SP (inwg)	BHP (op)	BHP (70)	RPM	SE %	Temp (F)	Density	Elevation	Tip Speed	Outlet Vel	Class
60.00	60000	0.25	14.08	14.08	599	17	70	0.075	0	9415	2993	-

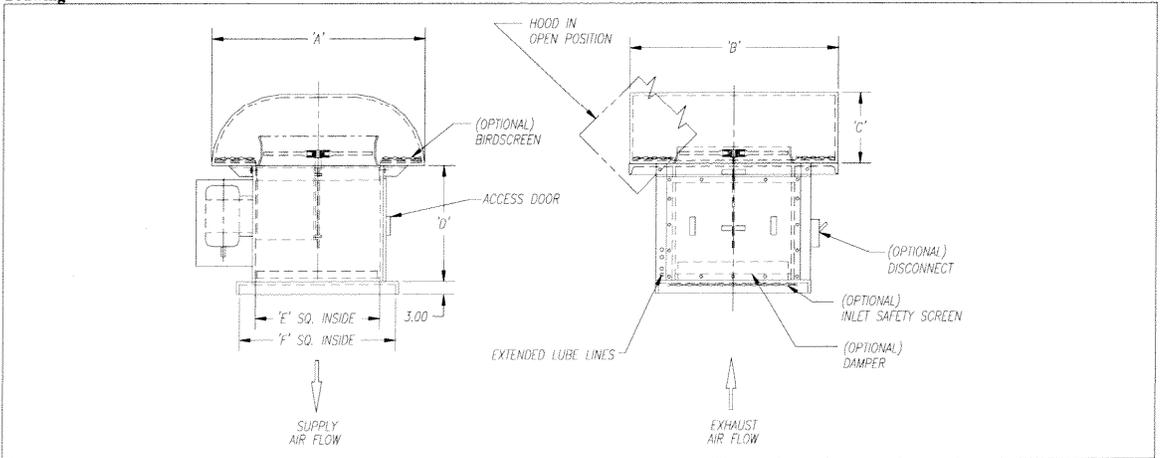
**Sound Data**

Inlet Sound Power (Lw re 10-12 watts)								dBa
63	125	250	500	1000	2000	4000	8000	@ 5'
103	91	92	94	92	91	84	82	86

**Curve**



**Drawing**



**Dimensional Chart** (Reference dimensions in inches only, contact factory for certified drawing)

Weight	A	B	C	D	E	F									
1620	139	90	33.5	45	66	72									

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Page: 1

Plant No. 3 SUPPLY FAN

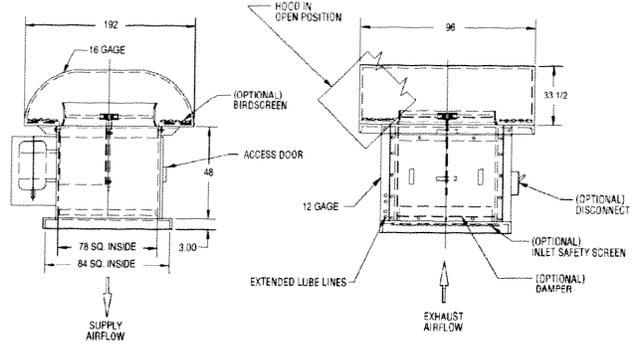
# HRR - Belt Drive Fan Data

Hooded Roof Ventilators

## 072

Prop Diameter = 72 in.	Maximum Motor Frame Size = 326
Fan Weight = 2450 lbs.	Tip Speed, FPM = 18.85 x RPM
Maximum BHP = F (RPM/1000) <sup>3</sup>	
F (097) = 179.18 F (091) = 56.72	
Inlet & Outlet Diameter (Area) = 72.75 in. (28.87 sq. ft.)	

Approximate fan weights are less motor and accessories.



PROP	CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		1" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
097*	34644	190	1.03	225	1.96	262	3.22	301	4.80	342	6.77						
	40418	221	1.64	251	2.69	282	4.00	314	5.57	348	7.44						
	46192	253	2.45	279	3.62	305	4.98	334	6.64	362	8.49	383	9.67				
	51966	284	3.49	306	4.79	331	6.25	355	7.94	381	9.86	405	11.90	431	14.30	485	19.70
	57740	316	4.78	337	6.21	358	7.79	379	9.34	402	11.50	424	13.70	446	15.90	493	21.20
	63514	348	6.37	367	7.91	386	9.81	405	11.40	425	13.40	445	15.70	466	18.10	507	23.30
	69288	379	8.27	397	9.93	414	11.80	432	13.70	449	15.70	468	18.00	486	20.50	524	25.80
	75062	411	10.50	426	12.30	443	14.30	459	16.30	476	18.40	491	20.60	509	23.20	543	28.70
	80836	443	13.10	457	15.00	472	17.10	487	19.30	503	21.60	518	23.90	532	26.30		

PROP	CFM	0" SP		1/8" SP		1/4" SP		3/8" SP		1/2" SP		5/8" SP		3/4" SP		1" SP	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
091	34644	277	1.09	343	2.25	404	3.74	459	5.47	509	7.39	555	9.56	597	11.90	676	17.40
	40418	324	1.73	380	3.03	434	4.63	485	6.48	532	8.51	575	10.70	616	13.10	691	18.50
	46192	370	2.58	420	4.03	467	5.72	513	7.68	557	9.85	599	12.20	638	14.60	710	20.00
	51966	416	3.67	461	5.28	504	7.11	546	9.16	585	11.40	625	13.90	661	16.40	731	22.00
	57740	462	5.04	503	6.81	542	8.76	579	10.90	617	13.30	653	15.80	668	18.50	754	24.30
	63514	509	6.71	546	8.63	581	10.70	616	13.00	650	15.40	684	18.10	716	20.90	780	27.00
	69288	555	8.71	589	10.80	622	13.00	654	15.40	686	18.00	717	20.70	748	23.70		
	75062	601	11.10	632	13.30	664	15.70	693	18.20	723	20.90	751	23.70	781	26.80		
	80836	647	13.80	676	16.20	706	18.80	733	21.40	761	24.30	788	27.20				

- Notes:
- 1) Performance shown is for Installation Type A: free inlet, free outlet.
  - 2) Performance ratings do not include the effects of appurtenances in the airstream.
  - 3) Power rating (BHP) does not include drive losses.
- \* 091 and 097 wheels are suitable for exhaust or supply applications, however, 097 wheels are NOT reversible. For reversible flow, select a 091 wheel and add .39 VP loss for equal airflow in both directions.

# Plant No. 3 SUPPLY FAN



**PENN BARRY**

1401 N. Plano Rd.  
Richardson, TX 75081  
Tel: (972) 234-3202  
Fax: (972) 497-0468

**Project:** Pump Bldg fans  
**Model:** HRR-072-09728  
**Tag:** supply fans

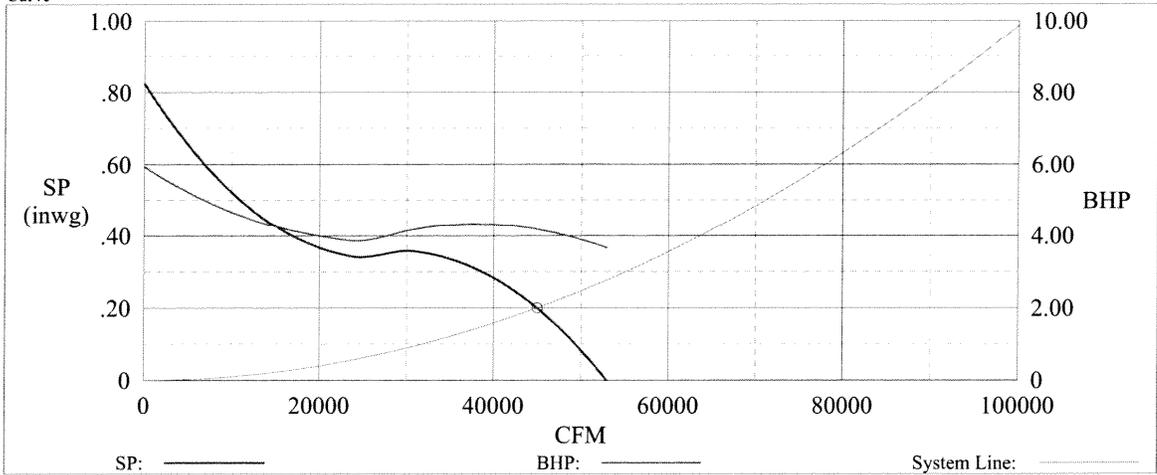
**Performance Data**

Dia (in)	CFM	SP (inwg)	BHP (op)	BHP (70)	RPM	SE %	Temp (F)	Density	Elevation	Tip Speed	Outlet Vel	Class
72.00	45000	0.20	4.19	4.19	289	34	70	0.075	0	5452	1559	-

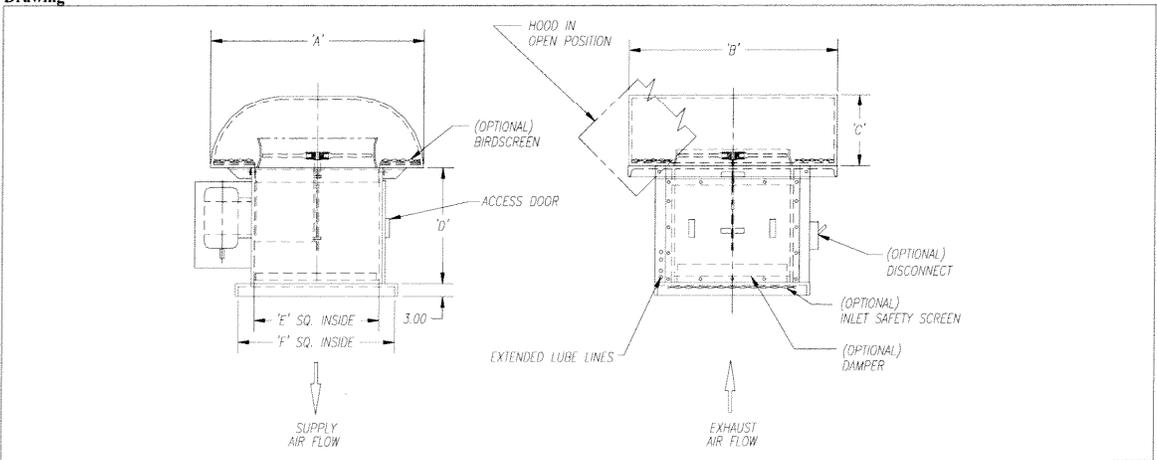
**Sound Data**

Inlet Sound Power (Lw re 10-12 watts)										dBa
63	125	250	500	1000	2000	4000	8000			@ 5'
92	80	81	83	81	80	73	71			75

**Curve**



**Drawing**



**Dimensional Chart** (Reference dimensions in inches only, contact factory for certified drawing)

Weight	A	B	C	D	E	F							
2450	192	96	33.5	48	78	84							

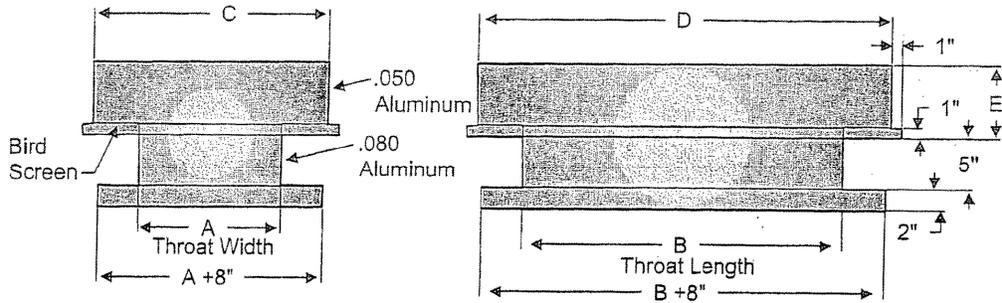
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Page: 1

# Plant No. 3 GRAVITY HOOD

## MODEL BGH INTAKE/RELIEF GRAVITY HOODS



### STANDARD FEATURES

- All aluminum or steel construction with standard mill finish.
- All curb base corners miter cut and continuous welded.
- Hood reinforced and braced for extra strength.
- Hood assembled with standing and snap back seams secured with spot welds.
- Hood perimeter opening area same as throat area.  
Relief 1:1 ratio  
Intake 2:1 ratio
- Birdscreen of 1/2" x 1/2" mesh galvanized welded wire.  
NOT AVAILABLE W/ FILTERS
- Hood has wide overhang for storm protection.

### OPTIONS

- **Hinged Hood** - For easy access.
- **Insulated Hood** - Rubberized anti-condensate under coating or 1" BAT type glass fiber.
- **Filters** - Permanent type 1" or 2" thick cleanable aluminum mesh.
- **Insect Screens** - Aluminum 18 mesh in perimeter opening.
- **Aluminum Birdscreen** - Diamond shaped 1/2" x 1" flattened expanded aluminum .060" thick.
- **Storm Construction** - Extra heavy internal reinforcement and bracing.
- **Decorative Coatings** - Industrial grade enamel in specified color.
- **Protective Coatings** - Grey epoxy, eisenheiss (synthetic resin), or heresite.

Line	Qty.	Model	Throat I.D. A x B	Hood Height. E	Overall Height F	O.D. Hood C x D	O.D. Curb Cap A + 8" & B + 8"	OPTIONS				Additional Specifications
								Auto BDD	Mtr BDD	Spec. Screens	Spec. Coatings	
1												
2												
3												
4												
5												

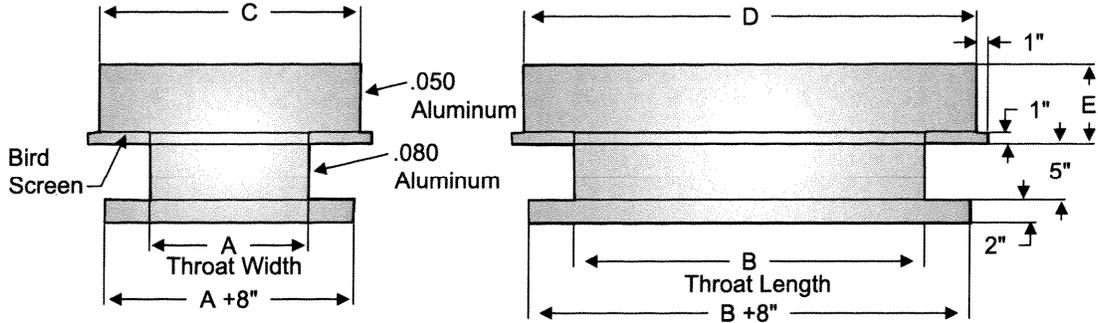
Project: _____	Submitted: _____
Customer: _____	Approved: _____
Location: _____	

**Plant No. 3 GRAVITY HOOD**

**MODEL BGH  
INTAKE/RELIEF  
GRAVITY HOODS**



6393 Powers Avenue  
Jacksonville, Florida 32217-2298  
P: 800.961.7370 / F: 800.961.7379  
www.solerpalau-usa.com



**STANDARD FEATURES**

- All aluminum or steel construction with standard mill finish.
- All curb base corners miter cut and continuous welded.
- Hood reinforced and braced for extra strength.
- Hood assembled with standing and snap back seams secured with spot welds.
- Hood perimeter opening area same as throat area.  
**Relief 1:1 ratio**  
**Intake 2:1 ratio**
- Birdscreen of 1/2" x 1/2" mesh galvanized welded wire.  
NOT AVAILABLE W/ FILTERS
- Hood has wide overhang for storm protection.

**OPTIONS**

- **Hinged Hood** - For easy access.
- **Insulated Hood** - Rubberized anti-condensate under coating or 1" BAT type glass fiber.
- **Filters** - Permanent type 1" or 2" thick cleanable aluminum mesh.
- **Insect Screens** - Aluminum 18 mesh in perimeter opening.
- **Aluminum Birdscreen** - Diamond shaped 1/2" x 1" flattened expanded aluminum .060" thick.
- **Storm Construction** - Extra heavy internal reinforcement and bracing.
- **Decorative Coatings** - Industrial grade enamel in specified color.
- **Protective Coatings** - Grey epoxy, eisenheiss (synthetic resin), or heresite.

Line	Qty.	Model	Throat I.D. A x B	Hood Height. E	Overall Height F	O.D. Hood C x D	O.D. Curb Cap A + 8" & B + 8"	OPTIONS				Additional Specifications
								Auto BDD	Mtr BDD	Spec. Screens	Spec. Coatings	
1	1	BGH	72 x 54	10	15		80" x 62"	NO	NO	Bird	Epoxy	
2												
3												
4												
5												

Project: 2300 Federal Road Pump Building	Submitted: 11/12/2010
Customer: Beard Mechanical	Approved: _____
Location: Houston, TX	

**BID GROUP NO. 3**

2.0 Equipment:

**LINE ITEM NO. 1**     **NEW REPLACEMENT UNIT: EXHAUST FAN**  
Make: Breidert  
Model: HRED-C30-1.5-B **Or City Approved Equal**

**LINE ITEM NO. 2**     **NEW REPLACEMENT UNIT: EXHAUST FAN**  
Make: Breidert  
Model: TXB-20-1.5 **Or City Approved Equal**

**LINE ITEM NO. 3**     **NEW REPLACEMENT UNIT: EXHAUST FAN**  
Make: Breidert  
Model: RED 1550 **Or City Approved Equal**

**LINE ITEM NO. 4**     **NEW REPLACEMENT UNIT: SUPPLY FAN**  
Make: Breidert  
Model: HRSB 24-1.5 **Or City Approved Equal**

2.1 Summary and Scope of Work:

2.1.1 The Contractor shall be required to remove and properly dispose the existing exhaust fans, supply fans and dampers at the two Chemical Buildings. The Contractor shall also be required to provide and install four Breidert, Model No. HRED-C20-1.5HP, exhaust fans, two Breidert, Model No. TXB-20-1.5HP, exhaust fans, one RED 1550-.5HP, exhaust fan and two HRSB 24-1.5HP, supply fans, or City approved equals, disconnects and all electrical connections.

2.2 Performance Requirements:

2.2.1 The exhaust fan shall provide: 460V/60HZ – (HRED-C20 **1.5HP**), (TXB-20 **1.5HP**) (RED 1550 **.5HP**)  
(As per the specifications provided on the cut sheet drawings, Page Nos. 21 through 30 of 42 )

2.2.4 The supply fan shall provide: 460V/60HZ – 5HP  
(As per the specifications provided on the cut sheet drawings, Page Nos.31 & 32 of 42 )

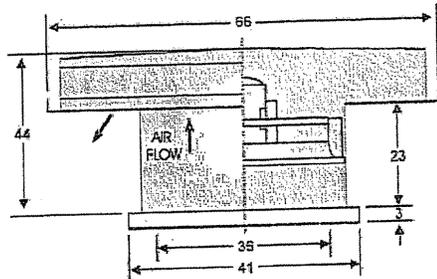
**A PDF version of the Mechanical Drawings can be viewed on the following web link:**  
**<https://purchasing.houstontx.gov/buyer/BidDocumentManager.aspx?id=C24103>**

# Chemical Buildings EXHAUST FAN

## Breidert Air Products Fan Submittal: HRED-C30-1.5-B for 2300 FEDERAL FANS

Qty: 4  
Tag: CHEM BLDGS

### Propeller Roof Ventilator-Direct Drive Hooded Exhaust



Préfab Curb O.D. = 39"  
Avg. Wt = 550 lbs.

**ACCESSORIES:**  
NEMA1 3PH 240-480V 2HP MAX SW/ASSY • MOUNTED DISCONNECT FOR HREBC/HREDC/HRSB/HRSD • 32 X 32 FRONT FLANGE DAMPER EXHAUST • 39-1/4" SQ GALV RF CURB 12" HIGH W.D.T. • VERTICAL BIRD SCREEN 30" EXHAUST FAN 66" HOOD ALL HP • HIGH WIND HOOD TIE DOWN 30" • 30" CURB CAP ADAPTOR PROP +1" SEND TO ENG •

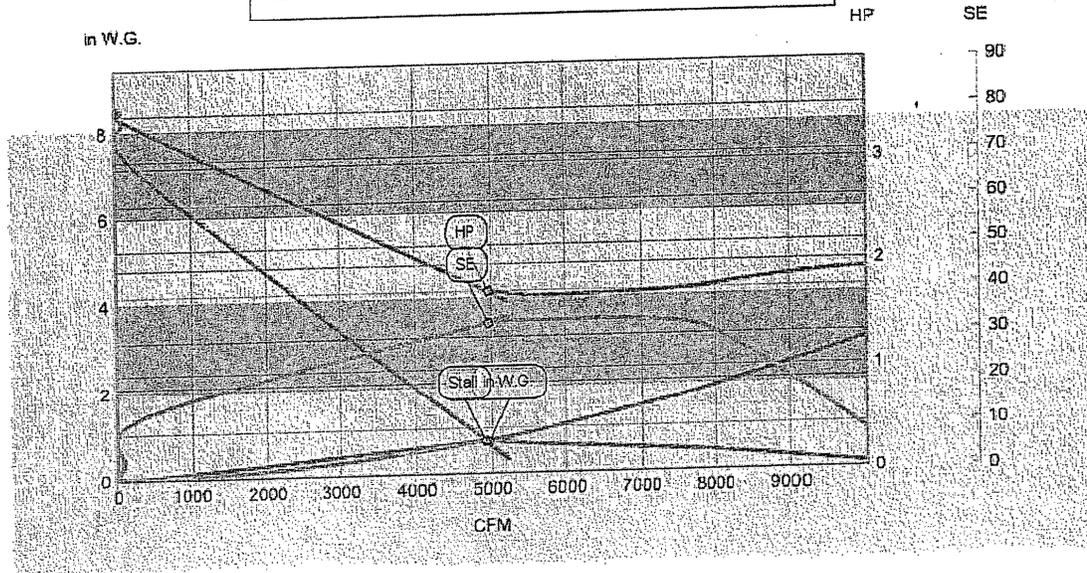
**STANDARD FEATURES:**  
AMCA Air and Sound Licensed • Heavy Gauge Welded Galvanized Construction • Statically and Dynamically Balanced Aluminum Propeller • 1 Year Fan and Motor Warranty • Motors Rated for Continuous Duty • Removeable Panel for Easy Damper Access • Low Profile • Integral Deep Spun Inlet • All Welded Support Structure • Hinged Hood for easy Access •



<b>870 RPM</b>	<b>Motor 1-1/2HP 208-230/460 1140 RPM TE 1-1/8" SHAFT (WIRE MOTOR FOR 460 VOLT)</b>	
<b>Flow</b>	<b>Pressure</b>	<b>Power</b>
4949 CFM	.735 in W.G.	1.755 HP
.075 Lb/Ft <sup>3</sup> (Density)		
33% SE	6833 FPM (TS)	233 FPM (OV)

<b>DBA</b>	<b>SONE</b>
71.9	21

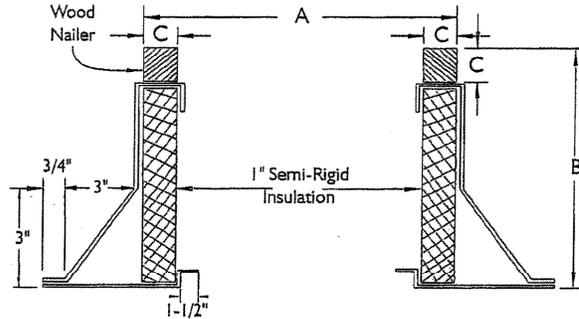
System Curve	Horsepower	Stall Curve
Fan Curve	Static Efficiency	



# Chemical Buildings EXHAUST FAN

## INSULATED CANTED ROOF CURB

  
**Breidert**  
 Air Products  
 6393 Powers Avenue  
 Jacksonville, Florida 32217-2298  
 P. 904.731.4711 / F. 904.737.8322  
 www.breidert.com  
 Soler&Pala  
Ventilation Group



- OPTIONS:**
1. Metal Liner - solid or screen type.
  2. Burglar bars - 1/2" dia. on 6" centers.
  3. Finishes - baked or air-dried enamel or epoxy.
  4. Heights: 8, 12, or 16".
  5. Single pitch, double pitch or flat style.
  6. Damper Tray.

FAN SIZE	"A" OD (Square) CURB / RF TYPE								"B" CURB HEIGHT	"C" WOOD NAILER	GAUGES	WT.
	CENT. SUPPLY (KSF)	CENT. SUPPLY (CSF, LSF)	CENT. SUPPLY (SRT)	UP-BLAST ROOF (UBB, UBS, UBRD)	UPBLAST ROOF (UBSRD, UBSRD-HT, UBSRD-HT1)	UP-BLAST ROOF (TUB, TUB-HT)	HOODED ROOF (HREB-C, HRSEB, HREB-C, HRSD, HRSEB, HRSEF)	PROPELLER ROOF (ARE/ARS)				
9	22-3/4	22-3/4	-	-	-	-	-	-	12" STD	1-1/2" Sq	18	34
10	26-1/2	26-1/2	14-3/4	-	-	-	-	18-1/2				36
12	30-1/2	26-1/2	-	-	-	-	-	22-1/2				36
15	30-1/2	30-1/2	-	-	-	-	-	-				36
16	-	-	-	-	-	-	-	26-1/2				36
18	34-5/8	34-5/8	-	-	-	-	-	-				40
20	49	49	-	-	-	-	-	30-1/2				58
24	-	-	-	31	28-1/2	33-1/4	33-1/4	-				39
30	-	-	-	37	34-1/2	39-1/4	39-1/4	-				46
36	-	-	-	43	40-1/2	45-1/4	45-1/4	-				54
42	-	-	-	49	46-1/2	51-1/4	51-1/4	-				61
48	-	-	-	55	52-1/2	57-1/4	57-1/4	-				68
54	-	-	-	61	58-1/2	63-1/4	63-1/4	-	75			
60	-	-	-	67	64-1/2	69-1/4	69-1/4	-	82			

1. Standard construction is shown. If special construction is required, note changes below and highlight.
2. G-90 galvanized welded steel construction.

ACCESSORY ITEMS	1	2	3	4	5	ACCESSORY ITEMS	1	2	3	4	5
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<input type="checkbox"/>						<input type="checkbox"/>					
<input type="checkbox"/>						<input type="checkbox"/>					
<input type="checkbox"/>						<input type="checkbox"/>					
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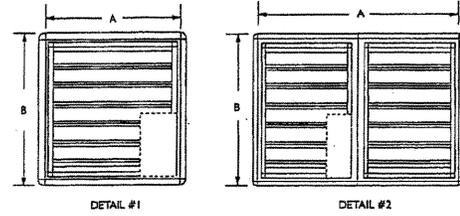
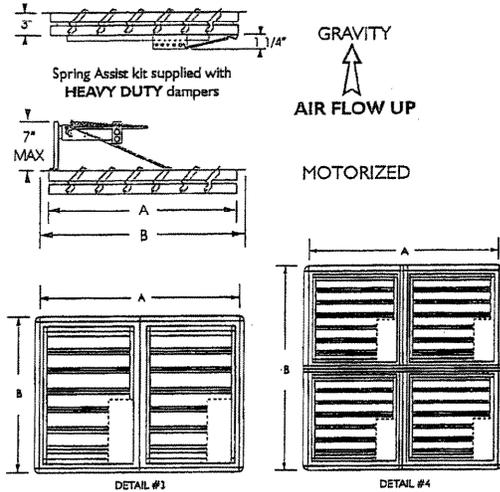
Project: _____	Submitted: _____
Customer: _____	Approved: _____
Location: _____	

Ccurb\_Submittal\_0410\_BAP

Subject to change unless approved in submittal by Breidert Air Products

# Chemical Buildings EXHAUST FAN

## BACKDRAFT DAMPERS FOR ROOF MOUNTED HOODED EXHAUST PROPELLER FANS



**STANDARD SPECIFICATIONS:**

- Maximum Face Velocity: 3000 fpm.
- Temperature limits: -40°F to 200°F (-40°C to 94°C)
- Minimum Size: 8 x 8
- Size: Single section: 42 x 64 Max W/H  
Multiple section assembly - Unlimited size.
- Frame: 20 gauge galvanized steel.
- Blades: .025 thick aluminum.  
HD 28 gauge galvanized steel.
- Seals: Extruded vinyl mechanically locked into blades.
- Axles: Stainless Steel.
- Linkage: Stainless steel pins, galvanized steel tie bar.
- Finish: Mill.

MODELS HREB-C, BHRED-C			DAMPER MOTOR		PANELS (Detail)
FAN SIZE	A Sq SIZE	B Sq OD FLANGE	TYPE	QTY	
24	26	28-1/2	MP2781-S	1	1
30	32	34-1/2	MP2781-S	1	1
36	38	40-1/2	MA220-S	1	1
42	44	46-1/2	MA220-S	1	2
48	50	52-1/2	MA220-S	1	2
54	56	58-1/2	MA220-S	2	3
60	62	65-1/2	MA220-S	2	3
72	76	78-1/2	MA220-S	4	4

**NOTES:**

- (1) Do not mount fan less than 12 inches from the shutter.
- (2) Motors available in 24V, 120V, 240V & 440V.
- (3) Dampers shipped in individual cartons.
- (4) Motors and spring kits ship separately.
- (5) Center-pivoted dampers must be used on reversible fans.
- (6) Multiple section assemblies may require bracing to support the weight of the assembly and to hold against system pressure. **BRACING SUPPLIED BY OTHERS.**
- (7) Multiple section dampers are factory joined (except 72" and larger).

**CAUTION:** Motor kits are not suitable for use in explosive or flammable areas or airflows.

Heavy-duty Dampers required on all units with 7 1/2HP motors and above.

ACCESSORY ITEMS	1	2	3	4	5	ACCESSORY ITEMS	1	2	3	4	5
<input type="checkbox"/>						<input type="checkbox"/>					
<input type="checkbox"/>						<input type="checkbox"/>					
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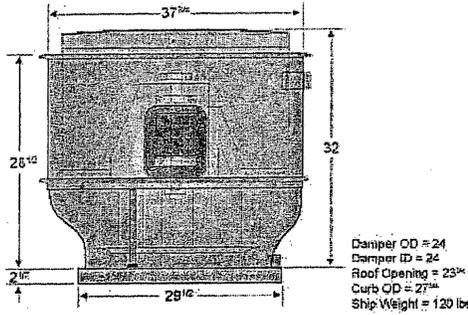
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 Customer: \_\_\_\_\_ Approved: \_\_\_\_\_  
 Location: \_\_\_\_\_

# Chemical Buildings EXHAUST FAN

## Breidert Air Products Fan Submittal: TXB20-1.5 for 2300 FEDERAL FANS

Qty: 2  
Tag: CHEM BLDGS

### Centrifugal Roof Exhauster-Belt Drive Upblast



**ACCESSORIES:**  
MOUNTED DISCONNECT FOR DB/TXB • 24 X 24  
AUTO EXHAUST DAMPER • 27-3/4" SQ GALV RF  
CURB 12" HIGH W.D.T. • LABEL UL/CUL 705  
LISTED POWER VENT (7091) • CURB CAP ADPT  
29-1/4 ID X 26 OD • TXB 18"-20" HIGH WIND TIE  
DOWN KIT • BELT TENSIONER ASSY DB11-  
ZU/TXB12-Z0 •

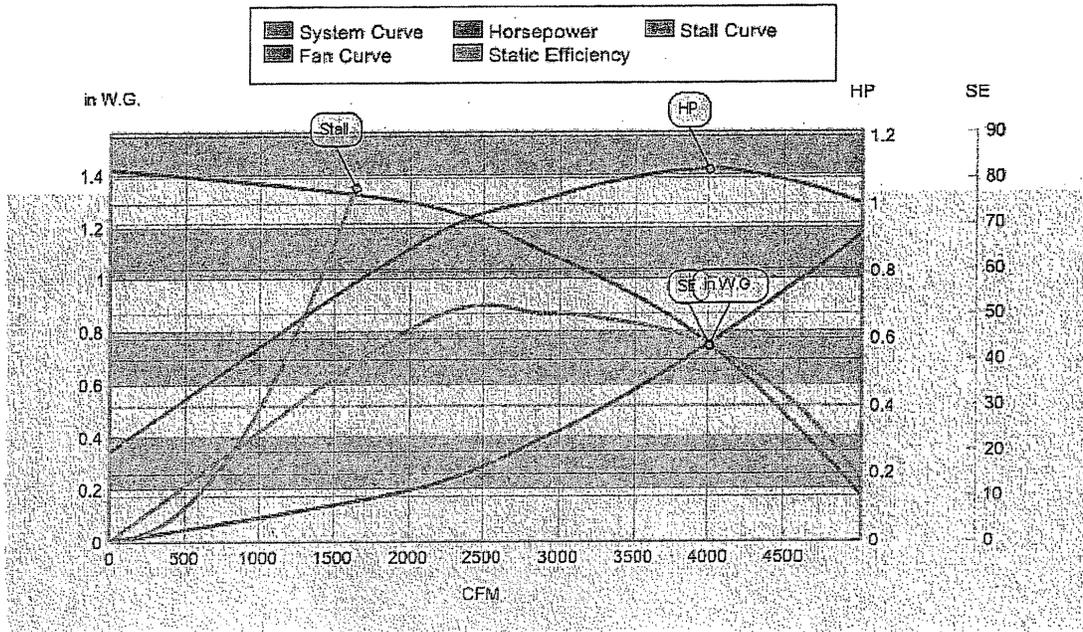
**STANDARD FEATURES:**  
AMCA Air and Sound Licensed • UL/UL-C 705  
Certified (Optional) • Standard Disconnect and  
Birdscreen • Heavy Gauge Aluminum Construction •  
Non-Overloading Aluminum Backward Inclined  
Wheel • Drives Sized for a Minimum of 150% of  
Drive Horsepower • 1 Year Fan and Motor Warranty - UL762 • Heavy Duty  
200,000 Hour Rated Pillow Block Bearings • Integral Deep Spun Inlet •



<b>980 RPM</b>	<b>Motor 1-1/2HP 208-230/460 1725 RPM TE 7/8" SHAFT (WIRE MOTOR FOR 460 VOLT)</b>	
Flow	Pressure	Power
4000 CFM	.75 In W.G.	1.105 HP
.075 Lb/ft <sup>3</sup> (Density)		
43% SE	5131 FPM (TS)	2000 FPM (OV)

Sound Power Levels - Octave Bands

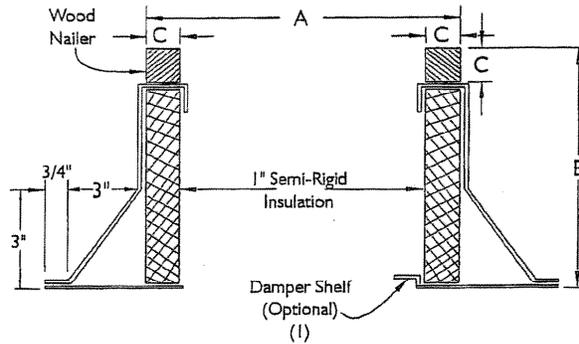
LWA	DBA	SONE	LW1	LW2	LW3	LW4	LW5	LW6	LW7	LW8
78.4	66.9	15.8	77.8	80.5	82.4	75.1	70.2	68.7	65.2	60.9



# Chemical Buildings EXHAUST FAN

## INSULATED CANTED ROOF CURB NON-PROPELLER PRODUCTS

  
**Breidert**  
 Air Products  
 6393 Powers Avenue  
 Jacksonville, Florida 32217-2298  
 P. 904.731.4711 / F. 904.737.8322  
 www.breidert.com  
 Soler & Peabody Ventilation Group



**OPTIONS:**

1. Damper Shelf.
2. Metal Liner - solid or screen type.
3. Burglar bars - 1/2" dia. on 6" centers.
4. Finishes - baked or air-dried enamel or epoxy.
5. Heights: 8, 12, 16, 18, 20, 24" or special heights.
6. Single pitch or double pitch.
7. Aluminum construction.
8. Standard curb is "RF" roof over type. ("SF" available upon request)

FAN SIZE	"A" OD (Square) CURB				DB		"B" CURB HEIGHT	"C" WOOD NAILER
	TXB	TXD	RCX 11	RED / LPD	FAN SIZE	CURB OD "A"		
6	-	14-3/4	-	14-3/4	6	14-3/4	12" STD	1-1/2" Sq
8	14-3/4	14-3/4	14-3/4	14-3/4	8	14-3/4		
10	14-3/4	14-3/4	14-3/4	14-3/4	9	14-3/4		
12	22-1/4	22-1/4	22-1/4	22-1/4	11	22-1/4		
15	22-1/4	22-1/4	22-1/4	22-1/4	12	22-1/4		
18	27-3/4	-	27-3/4	-	14	22-1/4		
20	-	-	27-3/4	-	16	22-1/4		
24	33-3/4	-	33-3/4	-	18	27-3/4		
26	-	-	33-3/4	-	20	27-3/4		
30	40-3/4	-	40-3/4	-	24	33-3/4		
33	-	-	40-3/4	-	30	40-3/4		
36	40-3/4	-	40-3/4	-	36	40-3/4		
42	53-1/4	-	-	-	42	53-1/4		
48	53-1/4	-	-	-	48	53-1/4		

1. Damper shelf opening to be 1" less than damper size. Shelf must be specified if required.
2. All curbs are 18 gauge G-90 galvanized steel with continuous seams.
3. See current curb submittal for all propeller fan roof curbs.

**ROOF OPENING**  
 Curb O.D. (A Dimension) Less 3.25 inches

ACCESSORY ITEMS					ACCESSORY ITEMS				
1	2	3	4	5	1	2	3	4	5
<input type="checkbox"/>					<input type="checkbox"/>				
<input type="checkbox"/>					<input type="checkbox"/>				
<input type="checkbox"/>					<input type="checkbox"/>				
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Project: _____	Submitted: _____
Customer: _____	Approved: _____
Location: _____	

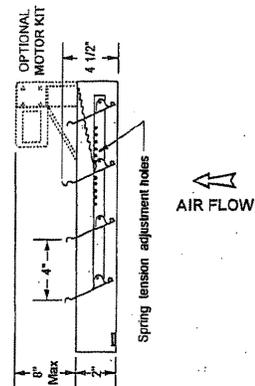
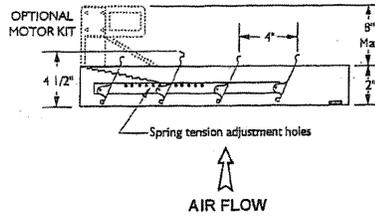
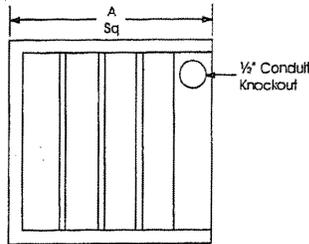
Curb\_NonProp\_Submittal\_0410

Subject to change unless approved in submittal by Breidert Air Products

# Chemical Buildings EXHAUST FAN

## BACKDRAFT DAMPER FOR ROOF MOUNTED AND INLINE CENTRIFUGAL/PROPELLER EXHAUST FANS

  
**Breidert**  
 Air Products  
 6393 Powers Avenue  
 Jacksonville, Florida 32217-2298  
 P. 904.731.4711 / F. 904.737.8322  
 www.breidert.com  
 Soler&Palau Ventilation Group



**CAUTION:** Motor kits are not suitable for use in explosive or flammable areas or airflows.

For low velocity (CFM) field adjustment of spring tension may be required to ensure that damper blades open completely.

FAN SIZE	CENTRIFUGAL ROOF FANS		INLINE FANS		PROPELLER
	DB, RED, TXB, LPD, TXD	SQB	SQD	ARE	
	"A" SQUARE	"A" SQUARE	"A" SQUARE	"A" SQUARE	
6	11	-	9	-	
7	-	12	-	-	
8	11	12	12	-	
9	11	-	-	-	
10	11	14	14	14	
11/12	18	18	18	18	
14	18	-	-	-	
15	18	22	20	-	
16	18	-	-	22	
18	24	24	-	-	
20	24	28	-	26	
24	30	35	-	-	
30	36	40	-	-	
36	36	48	-	-	
42	48	54	-	-	
48	48	-	-	-	

**STANDARD SPECIFICATIONS:**

Maximum Face Velocity: 2250 fpm.  
 Dimensions: See sizing chart.  
 "A" Dimension is square damper size.  
 Frame: Galvanized steel, 2" Deep  
 Blades: 26 gauge Mill Finish aluminum.  
 Blade pivots: Stainless steel rivet at all pivot points.  
 Seals: Felt between adjacent blades.  
 Counter Balance: Adjustable spring tension.  
 Finish: Mill.  
 Max Temp: Damper 250° F  
 Motor 130° F

**CAUTION:** Motor kits are not suitable for use in explosive or flammable areas or airflows.

**NOTES:**

- (1) Units are oversized 1/4" to fit in square ducts.
- (2) Do not mount fan less than 1/3 diameter of the fan from the damper.
- (3) Dampers shipped in individual cartons.
- (4) Motor kits ship loose for field installation.

ACCESSORY ITEMS					ACCESSORY ITEMS				
1	2	3	4	5	1	2	3	4	5
<input type="checkbox"/>					<input type="checkbox"/>				
<input type="checkbox"/>					<input type="checkbox"/>				
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Project: \_\_\_\_\_ Submitted: \_\_\_\_\_  
 Customer: \_\_\_\_\_ Approved: \_\_\_\_\_  
 Location: \_\_\_\_\_

RoofCentPropExhaustDmper\_Submittal\_BAP

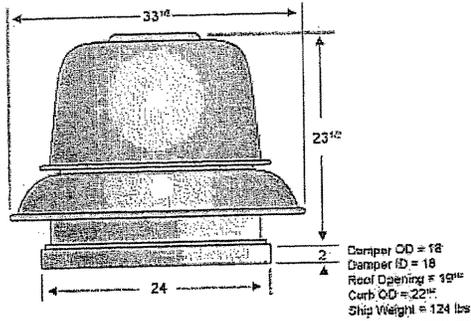
Subject to change unless approved in submittal by Breidert Air Products

# Chemical Buildings EXHAUST FAN

## Breidert Air Products Fan Submittal: RED1550\* for 2300 FEDERAL FANS

Qty: 1  
Tag: CHEM BLDGS

### Centrifugal Roof Exhauster-Direct Drive (V.S.C.)



**ACCESSORIES:**  
MOUNTED DISCONNECT FOR RED/LPD • SPD  
CNTRL 115V 10 AMP LOOSE • 18 X 18 AUTO  
EXHAUST DAMPER • 22 1/4" SQ GALV RF CURB  
12" HIGH W.D.T. • LABEL UL/CUL 705 LISTED  
POWER VENT (709J) • CURB CAP ADPT 23-3/4 ID  
X 18 OD •

**STANDARD FEATURES:**  
Aluminum Birdscreen & Standard Disconnect • Open  
Drip-Proof Construction Standard • Motor Isolators  
Reduce Vibration and Sound • Deep Spun Inlet-  
Optimum Air and Sound Performance • Conduit  
Chase - Ease of Electrical Connection • Centrifugal  
Wheel - Non-Overloading Backward • Inclined Blades  
for Maximum Efficiency • UL and/or CSA Label - Electrical Reliability • AMCA  
Seal for Air and Sound Performance •

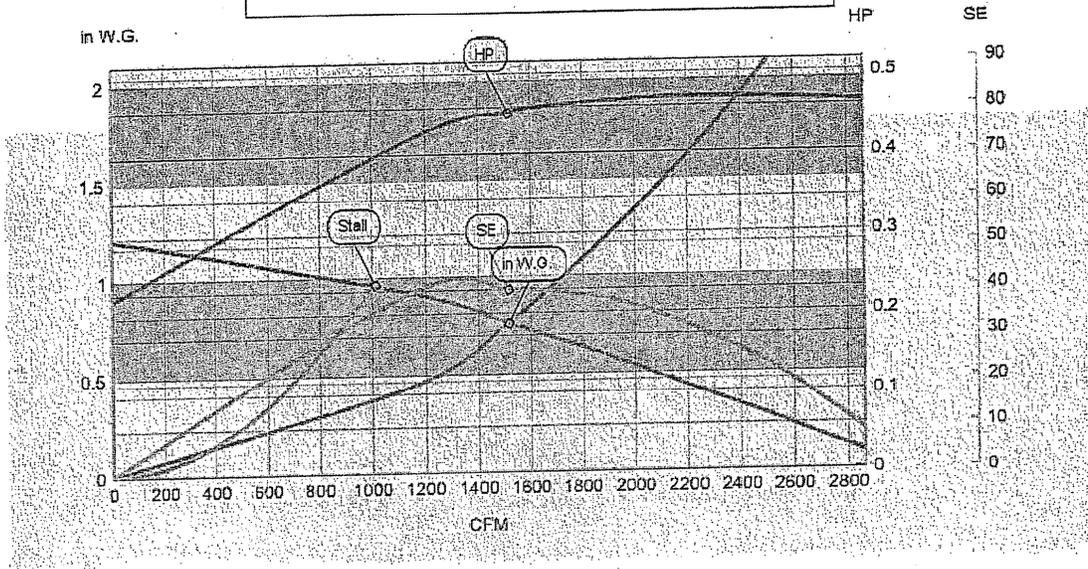


<b>1150 RPM</b>	<b>Motor 1/2HP 115/208-230 1140 RPM ODP 60HZ 5/8" SHAFT (WIRE MOTOR FOR 115 VOLT)</b>	<b>Power</b>
<b>Flow</b>	<b>Pressure</b>	<b>.452 HP</b>
1512 CFM	.762 in W.G.	
.075 Lb/Ft3 (Density)		
40% SE	5193 FPM (TS)	523 FPM (OV)

Sound Power Levels - Octave Bands

LWA	DBA	SDNE	LW1	LW2	LW3	LW4	LW5	LW6	LW7	LW8
73.5	62.0	12.9	88.3	77.4	76.3	70.8	64.3	64.0	59.0	54.7

System Curve	Horsepower	Stall Curve
Fan Curve	Static Efficiency	



# Chemical Buildings EXHAUST FAN

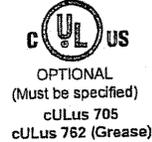
**MODEL TXB-RHUL-HWL**  
**UL762 LISTED RESTAURANT BELT DRIVE**  
**CENTRIFUGAL UPBLAST ROOF EXHAUSTER**  
**CERTIFIED HIGH WIND LOAD (HWL) CONSTRUCTION OPTION**

**Miami-Dade County, Florida NOA 09-0513.02** (expires 9-9-2014)

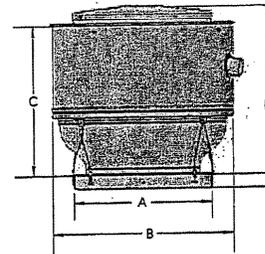


**STANDARD CONSTRUCTION FEATURES**

- High strength internal support and external stainless steel wire tie downs.
- High strength steel curb base with welded corners.
- Fiberglass free insulation.
- High efficiency, dynamically balanced non-stalling backward inclined wheel.
- Motor and drive assembly isolated from air stream and external environment for extended life.
- 1 or 3Ph ODP, TEFC, Explosion Proof or Premium Efficiency motors available.
- Ideally suited for coastline installations includes stainless steel fasteners and non-corrosive materials.
- NEMA disconnect switches available mounted and wired.



SIZE	DIMENSIONS (IN.)					AVG. SHIP WT. (LBS)
	A	B	C	D	E	
8	16 1/2	24	24	27	1 3/4	69
10	16 1/2	27	26	29	1 3/4	69
12/15/16	24	31 1/2	26	29	2 1/2	93
18/20	29 1/2	37 3/4	28 1/2	32	2 1/2	120
24	35 1/2	47 1/4	31 1/2	42	2 1/2	245
30	42 1/2	56 3/4	41	45	2 1/2	365
36	42 1/2	66	44	48	2 1/2	365
42	55	72 1/2	48	52	2 1/2	385
48	55	78 3/4	52	56	2 1/2	490



- A - Inside dimension of square curb cap.      D - Height of unit above top of curb.  
 B - Outside diameter of unit.                      E - Depth of curb mounting flange.  
 C - Height of exhaust opening above curb cap.

**DIMENSIONS REPRESENT GENERAL CONSTRUCTION AND MAY VARY SLIGHTLY. CONTACT FACTORY FOR CERTIFIED DRAWINGS.**

**NOTES:**

1. MODEL TXB-RHUL HAS BEEN SUCCESSFULLY TESTED IN ACCORDANCE WITH MIAMI DADE TEST PROTOCOL TAS-201 (LARGE MISSILE IMPACT); TAS-202 (STATIC LOADING); TAS-203 (CYCLIC WIND PRESSURE LOADING).
2. ROOF STRUCTURE MUST BE DESIGNED TO WITHSTAND THE WEIGHT AND LOADING TRANSMITTED BY ROOF TOP FANS. FASTENERS SHALL BE AS SPECIFIED AND INSTALLED AS DETAILED.
3. DESIGN TESTING AND INSTALLATION CONFORMS TO 2007 FLORIDA BUILDING CODE AND ITS 2005 AND 2006 SUPPLEMENTS.
4. CERTIFIED HWL FAN CURBS MUST BE ANCHORED TO ROOF FRAMING MEMBERS AND NOT TO THE ROOFING SYSTEM.

FAN SPECIFICATIONS									MOTOR SPECIFICATIONS				
Line	Qty.	Model No.	Tag	CFM	SP	Fan RPM	BHP	Sones	HP	Volts	Phase	Hertz	Encl
1													
2													
3													
4													
5													

ACCESSORY ITEMS	1	2	3	4	5	ACCESSORY ITEMS	1	2	3	4	5
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<input type="checkbox"/>						<input type="checkbox"/>					
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 Customer: \_\_\_\_\_ Approved: \_\_\_\_\_  
 Location: \_\_\_\_\_

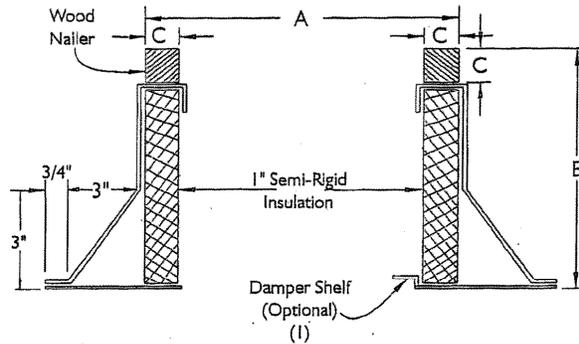
TXBRHUL-HWL\_Submittal\_0709

Subject to change unless approved in submittal by Breidert Air Products

NEW

# Chemical Buildings EXHAUST FAN

## INSULATED CANTED ROOF CURB NON-PROPELLER PRODUCTS



**OPTIONS:**

1. Damper Shelf.
2. Metal Liner - solid or screen type.
3. Burglar bars - 1/2" dia. on 6" centers.
4. Finishes - baked or air-dried enamel or epoxy.
5. Heights: 8, 12, 16, 18, 20, 24" or special heights.
6. Single pitch or double pitch.
7. Aluminum construction.
8. Standard curb is "RF" roof over type.  
("SF" available upon request)

FAN SIZE	"A" OD (Square) CURB				DB		"B" CURB HEIGHT	"C" WOOD NAILER
	TXB	TXD	RCX11	RED / LPD	FAN SIZE	CURB OD "A"		
6	-	14-3/4	-	14-3/4	6	14-3/4	12" STD	1-1/2" Sq
8	14-3/4	14-3/4	14-3/4	14-3/4	8	14-3/4		
10	14-3/4	14-3/4	14-3/4	14-3/4	9	14-3/4		
12	22-1/4	22-1/4	22-1/4	22-1/4	11	22-1/4		
15	22-1/4	22-1/4	22-1/4	22-1/4	12	22-1/4		
18	27-3/4	-	27-3/4	-	14	22-1/4		
20	-	-	27-3/4	-	16	22-1/4		
24	33-3/4	-	33-3/4	-	18	27-3/4		
26	-	-	33-3/4	-	20	27-3/4		
30	40-3/4	-	40-3/4	-	24	33-3/4		
33	-	-	40-3/4	-	30	40-3/4		
36	40-3/4	-	40-3/4	-	36	40-3/4		
42	53-1/4	-	-	-	42	53-1/4		
48	53-1/4	-	-	-	48	53-1/4		

1. Damper shelf opening to be 1" less than damper size. Shelf must be specified if required.
2. All curbs are 18 gauge G-90 galvanized steel with continuous seams.
3. See current curb submittal for all propeller fan roof curbs.

**ROOF OPENING**  
Curb O.D. (A Dimension) Less 3.25 Inches

ACCESSORY ITEMS	1	2	3	4	5	ACCESSORY ITEMS	1	2	3	4	5
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<input type="checkbox"/>						<input type="checkbox"/>					
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 Customer: \_\_\_\_\_ Approved: \_\_\_\_\_  
 Location: \_\_\_\_\_

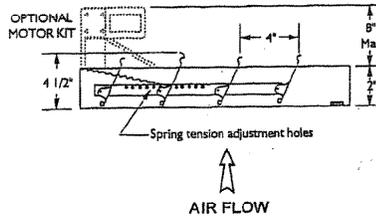
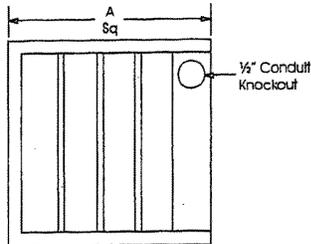
Ccurb\_NonProp\_Submittal\_0410

Subject to change unless approved in submittal by Breidert Air Products

# Chemical Buildings EXHAUST FAN

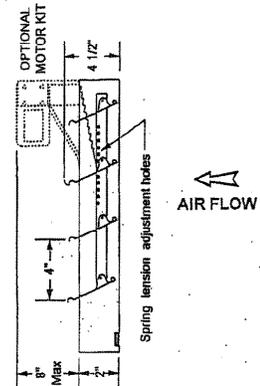
## BACKDRAFT DAMPER FOR ROOF MOUNTED AND INLINE CENTRIFUGAL/PROPELLER EXHAUST FANS

  
**Breidert**  
 Air Products  
 6393 Powers Avenue  
 Jacksonville, Florida 32217-2298  
 P: 904.731.4711 / F: 904.737.8322  
 www.breidert.com  
 Soler&Palau Ventilation Group



**CAUTION:** Motor kits are not suitable for use in explosive or flammable areas or airflows.

For low velocity (CFM) field adjustment of spring tension may be required to ensure that damper blades open completely.



FAN SIZE	CENTRIFUGAL ROOF FANS		INLINE FANS		PROPELLER
	DB, RED, TXB, LPD, TXD	SQB	SQD	ARE	
	"A" SQUARE	"A" SQUARE	"A" SQUARE	"A" SQUARE	"A" SQUARE
6	11	-	9	-	-
7	-	12	-	-	-
8	11	12	12	-	-
9	11	-	-	-	-
10	11	14	14	14	14
11/12	18	18	18	18	18
14	18	-	-	-	-
15	18	22	20	-	-
16	18	-	-	22	-
18	24	24	-	-	-
20	24	28	-	26	-
24	30	35	-	-	-
30	36	40	-	-	-
36	36	48	-	-	-
42	48	54	-	-	-
48	48	-	-	-	-

**STANDARD SPECIFICATIONS:**

Maximum Face Velocity: 2250 fpm.  
 Dimensions: See sizing chart.  
 "A" Dimension is square damper size.  
 Frame: Galvanized steel, 2" Deep  
 Blades: 26 gauge Mill Finish aluminum.  
 Blade pivots: Stainless steel rivet at all pivot points.  
 Seals: Felt between adjacent blades.  
 Counter Balances: Adjustable spring tension.  
 Finish: Mill.  
 Max Temp: Damper 250° F  
 Motor 130° F

**CAUTION:** Motor kits are not suitable for use in explosive or flammable areas or airflows.

**NOTES:**

- (1) Units are undersized 1/4" to fit in square ducts.
- (2) Do not mount fan less than 1/3 diameter of the fan from the damper.
- (3) Dampers shipped in individual cartons.
- (4) Motor kits ship loose for field installation.

ACCESSORY ITEMS	1	2	3	4	5	ACCESSORY ITEMS	1	2	3	4	5
<input type="checkbox"/>					<input type="checkbox"/>						
<input type="checkbox"/>					<input type="checkbox"/>						
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Project: \_\_\_\_\_ Submitted: \_\_\_\_\_  
 Customer: \_\_\_\_\_ Approved: \_\_\_\_\_  
 Location: \_\_\_\_\_

RoofCentPropExhaustDmper\_Submittal\_BAP

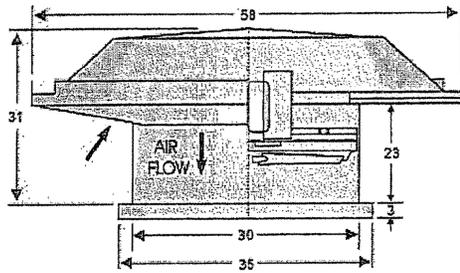
Subject to change unless approved in submittal by Breidert Air Products

# Chemical Buildings SUPPLY FAN

## Breidert Air Products Fan Submittal: HRSB24-1.5 for 2300 FEDERAL FANS

Qty: 2  
Tag: CHEM BLDGS

### Propeller Roof Ventilator-Belt Drive Hooded Supply



**ACCESSORIES:**

NEMA1 3PH 240-480V 2HP MAX SW/ASSY • 26 X 26 FRONT FLANGE DAMPER SUPPLY • SUPPLY COUNTERWEIGHT KIT 20" THRU 32" • MODEL MP2781 DAMPER MOTOR KIT 120 VOLT • 33-1/4" SQ GALV RF CURB 12" HIGH W.D.T. • LABEL UL/CUL 705 LISTED POWER VENT (709J) • HIGH WIND HOOD TIE DOWN 24" • SLANTED BIRD SCREEN 24" SUPPLY FAN 58" HOOD ALL HP • 24" CURB CAP ADAPTOR PROP + 2" SEND TO ENG •

**STANDARD FEATURES:**

AMCA Air and Sound Licensed • Statically and Dynamically Balanced Aluminum Propeller • Variable Pitch Drives Standard Through 3 HP. • Drives Sized for a Minimum 150% of Drive Horsepower. • 1 Year Fan and Motor Warranty • Removeable Panel for Easy Damper Access • Heavy Duty 200,000 Hour Rated Pillow Block Bearings • Low Profile • Integral Deep Spun Inlet • Hinged Hood for easy Access •

Prefab Curb O.D. = 33"  
Avg. WL = 425

<b>1478 RPM</b>	<b>Motor 1-1/2HP 208-230/460 1725 RPM TE 7/8" SHAFT (WIRE MOTOR FOR 460 VOLT)</b>
<b>Flow</b>	<b>Pressure</b>
4000 CFM	.75 in W.G.
.075 Lb/FT <sup>3</sup> (Density)	<b>Power</b>
31% SE	1.534 HP
9287 FPM (TS)	640 FPM (OV)

<b>DBA</b>	<b>SONE</b>
78.2	32.4

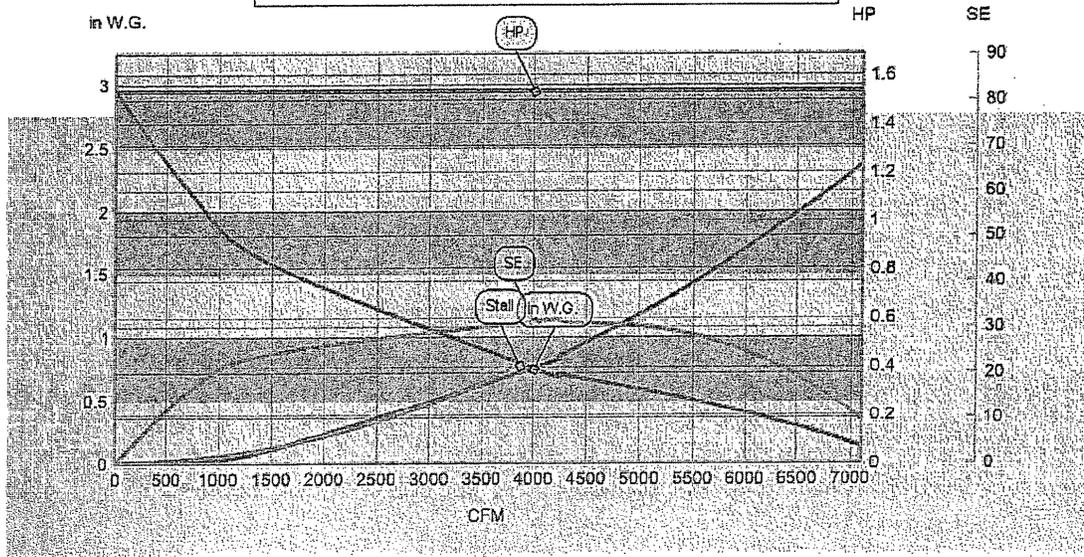
System Curve

Horsepower

Stall Curve

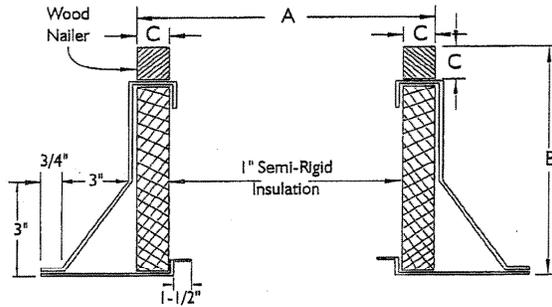
Fan Curve

Static Efficiency



# Chemical Buildings SUPPLY FAN

## INSULATED CANTED ROOF CURB



- OPTIONS:**
1. Metal Liner - solid or screen type.
  2. Burglar bars - 1/2" dia. on 6" centers.
  3. Finishes - baked or air-dried enamel or epoxy.
  4. Heights: 8, 12, or 16".
  5. Single pitch, double pitch or flat style.
  6. Damper Tray.

FAN SIZE	"A" OD (Square) CURB / RF TYPE								"B" CURB HEIGHT	"C" WOOD NAILER	GAUGES	WT.
	CENT. SUPPLY (KSF)	CENT. SUPPLY (CSF LSF)	CENT. SUPPLY (SRT)	UP-BLAST ROOF (UBB, UBS, UBX, UBRD)	UPBLAST ROOF (UBSRD-HT, UBSRD-HT)	UP-BLAST ROOF (TUB, TUB-HT)	HOODED ROOF (HREB-C, HRSB, HRED-C, HRSD, HRSBF, HRSDF)	PROPELLER ROOF (ARE/ARS)				
9	22-3/4	22-3/4	-	-	-	-	-	-	12" STD	1-1/2" Sq	18	34
10	26-1/2	26-1/2	14-3/4	-	-	-	-	18-1/2				36
12	30-1/2	26-1/2	-	-	-	-	-	22-1/2				36
15	30-1/2	30-1/2	-	-	-	-	-	-				36
16	-	-	-	-	-	-	-	26-1/2				36
18	34-5/8	34-5/8	-	-	-	-	-	-				40
20	49	49	-	-	-	-	-	30-1/2				58
24	-	-	-	31	28-1/2	33-1/4	33-1/4	-				39
30	-	-	-	37	34-1/2	39-1/4	39-1/4	-				46
36	-	-	-	43	40-1/2	45-1/4	45-1/4	-				54
42	-	-	-	49	46-1/2	51-1/4	51-1/4	-				61
48	-	-	-	55	52-1/2	57-1/4	57-1/4	-				68
54	-	-	-	61	58-1/2	63-1/4	63-1/4	-	75			
60	-	-	-	67	64-1/2	69-1/4	69-1/4	-	82			

1. Standard construction is shown. If special construction is required, note changes below and highlight.
2. G-90 galvanized welded steel construction.

ACCESSORY ITEMS	1	2	3	4	5	ACCESSORY ITEMS	1	2	3	4	5
<input type="checkbox"/>						<input type="checkbox"/>					
<input type="checkbox"/>						<input type="checkbox"/>					
<input type="checkbox"/>						<input type="checkbox"/>					
<input type="checkbox"/>						<input type="checkbox"/>					
<input type="checkbox"/>						<input type="checkbox"/>					

Project: \_\_\_\_\_ Submitted: \_\_\_\_\_  
 Customer: \_\_\_\_\_ Approved: \_\_\_\_\_  
 Location: \_\_\_\_\_

Ccurb\_Submittal\_0410\_BAP

Subject to change unless approved in submittal by Breidert Air Products

A PDF version of the Mechanical Drawings can be viewed on the following web link:  
<https://purchasing.houstontx.gov/buyer/BidDocumentManager.aspx?id=C24103>

END OF DOCUMENT

## SECTION C

**CITY OF HOUSTON 2011 BUILDING WAGE DECISION**  
A PDF version of the 2011 Building & Engineering Wage Decision  
can be viewed on the following web Link

<https://purchasing.houstontx.gov/buyer/BidDocumentManager.aspx?id=C24103>

### GENERAL CONDITIONS

A PDF version of the General Conditions can be viewed on the following web link:  
<https://purchasing.houstontx.gov/buyer/BidDocumentManager.aspx?id=C24103>

Document 00800

### SUPPLEMENTARY CONDITIONS

The following Paragraphs amend and supplement the 2005 edition of General Conditions. Unaltered portions of General Conditions remain in effect.

#### ARTICLE 3 - THE CONTRACTOR

3.5 *LABOR: Insert the following Paragraph 3.5.3.1.1.*

3.5.3.1.1 Contractor shall make good faith efforts to comply with the City ordinances regarding Minority and Women Business Enterprises (MWBE) and Persons with Disabilities Business Enterprises (PDBE) participation goals which are as follows:

- .1 the MWBE goal is 0 percent, and
- .2 the PDBE goal is 0 percent.

#### 3.28 **CONTRACTOR DEBT**

3.28.1 **IF CONTRACTOR, AT ANY TIME DURING THE TERM OF THIS AGREEMENT, INCURS A DEBT, AS THE WORD IS DEFINED IN SECTION 15-122 OF THE HOUSTON CITY CODE OF ORDINANCES, IT SHALL IMMEDIATELY NOTIFY CITY CONTROLLER IN WRITING. IF CITY CONTROLLER BECOMES AWARE THAT CONTRACTOR HAS INCURRED A DEBT, IT SHALL IMMEDIATELY NOTIFY CONTRACTOR IN WRITING. IF CONTRACTOR DOES NOT PAY THE DEBT WITHIN 30 DAYS OF EITHER SUCH NOTIFICATION, CITY CONTROLLER MAY DEDUCT FUNDS IN AN AMOUNT EQUAL TO THE DEBT FROM ANY PAYMENTS OWED TO CONTRACTOR UNDER THIS AGREEMENT, AND CONTRACTOR WAIVES ANY RECOURSE THEREFORE.**

## ARTICLE 8 - TIME

- 8.1 *PROGRESS AND COMPLETION: Delete Paragraph 8.1.6. and replace with the following 8.1.6.*
- 8.1.6.1 Contractor shall credit the City by Change Order for inspection services for overtime work or work performed on Sundays or Legal Holidays. The amount Contractor credits the City will be **\$50.00 per hour** per inspector for inspection services.

## ARTICLE 9 - PAYMENTS AND COMPLETION

- 9.1 *UNIT PRICE WORK: Delete Section 9.1 in its entirety and insert the following Section 9.1.*
- 9.1 References to Unit Prices in individual Specification sections are not applicable to the Contract. Include payment for portions of the Work required by these sections in the Stipulated Price for the Contract.
- 9.12 **LIQUIDATED DAMAGES: Insert the following Paragraph 9.12.1.1.**
- 9.12.1.1 **The amount of liquidated damages provided in General Conditions Paragraph 9.12.1 payable by Contractor or Surety for each and every day of delay beyond Contract Time, are \$500.00 per day.**

## ARTICLE 11 - INSURANCE AND BONDS

- 11.2 *INSURANCE TO BE PROVIDED BY CONTRACTOR: Delete Paragraph 11.2.8. and replace with the following 11.2.8.*
- 11.2.1.4 Contractor shall provide Owners and Contractor's Protective Liability Insurance only if the contractor's bid price is equal to or greater than \$100,000.00.
- 11.2.8 *Endorsement of Primary Insurance:* Each policy except Workers' Compensation Insurance must contain an endorsement that the policy is primary insurance to any other insurance available to additional insured with respect to claims arising under the Contract.



**ONE-YEAR MAINTENANCE BOND**

**THAT WE,** \_\_\_\_\_, as Principal, hereinafter called Contractor, and the other subscriber hereto, \_\_\_\_\_, as Surety, do hereby acknowledge ourselves to be held and firmly bound to the City of Houston, a municipal corporation, in the sum of \$\_\_\_\_\_, for the payment of which sum well and truly to be made to the City of Houston and its successors, the said Contractor and Surety do bind themselves, their heirs, executors, administrators, successors, jointly and severally.

**THE CONDITIONS OF THIS OBLIGATION ARE SUCH THAT:**

**WHEREAS,** the Contractor has on or about this day executed a Contract in writing with the City of Houston for \_\_\_\_\_, all of such work to be done as set out in full in said Contract documents therein referred to and adopted by the City Council, all of which are made a part of this instrument as fully and completely as if set out in full herein.

**NOW THEREFORE,** if the said Contractor shall comply with the provisions of Paragraph 11.5.1 of the General Conditions, and correct work not in accordance with the Contract documents discovered within the established one-year period, then this obligation shall become null and void, and shall be of no further force and effect; otherwise, the same is to remain in full force and effect.

Notices required or permitted hereunder shall be in writing and shall be deemed delivered when actually received or, if earlier, on the third day following deposit in a United States Postal Service post office or receptacle, with proper postage affixed (certified mail, return receipt requested), addressed to the respective other party at the address prescribed in the Contract documents, or at such other address as the receiving party may hereafter prescribe by written notice to the sending party.

**IN WITNESS THEREOF,** the said Contractor and Surety have signed and sealed this instrument on the respective dates written below their signatures and have attached current Power of Attorney.

WITNESS: (if not a corporation)

Name of Contractor \_\_\_\_\_

By: \_\_\_\_\_  
Name:  
Title:

By: \_\_\_\_\_  
Name:  
Title:  
Date:

ATTEST/SURETY WITNESS:

(SEAL)

\_\_\_\_\_  
Full Name of Surety

\_\_\_\_\_  
Address of Surety for Notice

\_\_\_\_\_  
Telephone Number of Surety

By: \_\_\_\_\_  
Name:  
Title:  
Date:

By: \_\_\_\_\_  
Name:  
Title: Attorney-in-Fact  
Date:

**This Ordinance or Contract has been reviewed as to form by the undersigned legal assistant and have been found to meet established Legal Department criteria. The Legal Department has not reviewed the content of these documents.**

\_\_\_\_\_  
Legal Assistant

\_\_\_\_\_  
Date

**PERFORMANCE BOND**

**THAT WE,** \_\_\_\_\_, as Principal, (the "Contractor"), and the other subscriber hereto, \_\_\_\_\_, as Surety, do hereby acknowledge ourselves to be held and firmly bound to the City of Houston (the "City"), a municipal corporation, in the penal sum of \$\_\_\_\_\_ for the payment of which sum, well and truly to be made to the City, its successors and assigns, Contractor and Surety do bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally.

**THE CONDITIONS OF THIS OBLIGATION ARE SUCH THAT:**

**WHEREAS,** the Contractor has on or about this day executed a Contract in writing with the City for \_\_\_\_\_, \_\_\_\_\_, all of such work to be done as set out in full in said Contract documents therein referred to and adopted by the City Council, all of which are made a part of this instrument as fully and completely as if set out in full herein.

**NOW THEREFORE,** if the said Contractor shall faithfully and strictly perform the Contract in all its terms, provisions, and stipulations in accordance with its true meaning and effect, and in accordance with the Contract documents referred to therein and shall comply strictly with each and every provision of the Contract and with this Bond, then this obligation shall become null and void and shall have no further force and effect; otherwise the same is to remain in full force and effect. Should the Contractor fail to faithfully and strictly perform the Contract in all its terms, including but not limited to the indemnifications thereunder, the Surety shall be liable for all damages, losses, expenses and liabilities that the City may suffer in consequence thereof, as more fully set forth herein.

It is further understood and agreed that the Surety does hereby relieve the City or its representatives from the exercise of any diligence whatever in securing compliance on the part of the Contractor with the terms of the Contract, and the Surety agrees that it shall be bound to take notice of and shall be held to have knowledge of all acts or omissions of the Contractor in all matters pertaining to the Contract. The Surety understands and agrees that the provision in the Contract that the City will retain certain amounts due the Contractor until the expiration of 30 days from the acceptance of the Work is intended for the City's benefit, and the City will have the right to pay or withhold such retained amounts or any other amount owing under the Contract without changing or affecting the liability of the Surety hereon in any degree.

It is further expressly agreed by Surety that the City or its representatives are at liberty at any time, without notice to the Surety, to make any change in the Contract documents and in the Work to be done hereunder, as provided in the Contract, and in the terms and conditions thereof, or to make any change in, addition to, or deduction from the Work to be done hereunder; and that such changes, if made, shall not in any way vitiate the obligation in this Bond and undertaking or release the Surety there from.

It is further expressly agreed and understood that the Contractor and Surety will fully indemnify and save harmless the City from any liability, loss, cost, expense, or damage arising

out of Contractor's performance of the Contract.

If the City gives Surety notice of Contractor's default, Surety shall, within 45 days, take one of the following actions:

1. Arrange for Contractor, with consent of the City, to perform and complete the Contract; or
2. Take over and assume completion of the Contract itself, through its agents or through independent contractors, and become entitled to the payment of the balance of the Contract Price.

If the Surety fails to take either of the actions set out above, it shall be deemed to have waived its right to perform and complete the Contract and receive payment of the balance of the Contract Price and the City shall be entitled to enforce any remedies available at law, including but not limited to completing the Contract itself and recovering any cost in excess of the Original Contract Price from the Surety.

This Bond and all obligations created hereunder shall be performable in Harris County, Texas. This Bond is given in compliance with the provisions of Chapter 2253, Texas Government Code, as amended, which is incorporated herein by this reference.

Notices required or permitted hereunder shall be in writing and shall be deemed delivered when actually received or, if earlier, on the third day following deposit in a United States Postal Service post office or receptacle, with proper postage affixed (certified mail, return receipt requested), addressed to the respective other Party at the address prescribed in the Contract documents, or at such other address as the receiving party may hereafter prescribe by written notice to the sending party.

EXECUTED in multiple originals this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

ATTEST/SEAL: (if a corporation)  
WITNESS: (if not corporation)

\_\_\_\_\_  
(Name of Principal)

\_\_\_\_\_  
(Address of Principal)

By: \_\_\_\_\_  
Name:  
Title:  
Date:

By: \_\_\_\_\_  
Name:  
Title:  
Date:

ATTEST/SEAL  
SURETY WITNESS:

\_\_\_\_\_  
(Name of Surety)

\_\_\_\_\_  
(Address of Surety)

By: \_\_\_\_\_  
Name:  
Title:  
Date:

By: \_\_\_\_\_  
Name:  
Title:  
Date:

REVIEWED:

This Bond has been reviewed as to form by the undersigned Paralegal and has been found to meet established Legal Department criteria.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Paralegal

**STATUTORY PAYMENT BOND**

**THAT WE,** \_\_\_\_\_, as Principal, hereinafter called Contractor and the other subscriber hereto, \_\_\_\_\_, as Surety, do hereby acknowledge ourselves to be held and firmly bound unto the City of Houston, a municipal corporation, in the sum of \$\_\_\_\_\_ for the payment of which sum, well and truly to be made to the City of Houston, and its successors, the said Contractor and Surety do bind themselves, their heirs, executors, administrators, successors, jointly and severally.

**THE CONDITIONS OF THIS OBLIGATION ARE SUCH THAT:**

**WHEREAS,** the Contractor has on or about this day executed a contract in writing with the City of Houston for \_\_\_\_\_, all of such work to be done as set out in full in said Contract documents therein referred to and adopted by the City Council, all of which are made a part of this instrument as fully and completely as if set out in full herein;

**NOW, THEREFORE,** if the said Contractor shall pay all claimants supplying labor and materials to him or a Subcontractor in the prosecution of the Work provided for in the Contract, then, this obligation shall be void; otherwise the same is to remain in full force and effect;

**PROVIDED HOWEVER,** that this Bond is executed pursuant to the provisions of Chapter 2253, Texas Government Code, as amended, and all liabilities on this Bond shall be determined in accordance with the provisions of said Article to the same extent as if it were copied at length herein.

**IN WITNESS THEREOF,** the said Contractor and Surety have signed and sealed this instrument on the respective dates written below their signatures and have attached current Power of Attorney.

I

ATTEST, SEAL: (if a corporation)  
WITNESS: (if not a corporation)

\_\_\_\_\_  
Name of Contractor

By: \_\_\_\_\_  
Name:  
Title:

By: \_\_\_\_\_  
Name:  
Title:  
Date:

ATTEST/SURETY WITNESS:

(SEAL)

\_\_\_\_\_  
Full Name of Surety

\_\_\_\_\_  
Address of Surety for Notice

\_\_\_\_\_  
Telephone Number of Surety

By: \_\_\_\_\_  
Name:  
Title:  
Date:

By: \_\_\_\_\_  
Name:  
Title: Attorney-in-Fact  
Date:

**This Ordinance or Contract has been reviewed as to form by the undersigned legal assistant and have been found to meet established Legal Department criteria. The Legal Department has not reviewed the content of these documents.**

\_\_\_\_\_  
Legal Assistant

\_\_\_\_\_  
Date